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(54) Title: EXPRESSION PROFILES AND METHODS OF USE

(57) **Abstract:** The present invention relates to gene expression profiles, algorithms to generate gene expression profiles, microarrays comprising nucleic acid sequences representing gene expression profiles, methods of using gene expression profiles and microarrays, and business methods directed to the use of gene expression profiles, microarrays, and algorithms. The present invention further relates to protein expression profiles, algorithms to generate protein expression profiles, microarrays comprising protein-capture agents that bind proteins comprising protein expression profiles, methods of using protein expression profiles and microarrays, and business methods directed to the use of protein expression profiles, microarrays, and algorithms.

WO 02/074979 A2

EXPRESSION PROFILES AND METHODS OF USE

CROSS REFERENCE TO RELATED APPLICATIONS

5 The present application is related to and claims, under 35 U.S.C. § 119(e), the benefit of U.S. Provisional Patent Application Serial No. 60/276,947, filed 20 March 2001, which is incorporated herein by reference.

FIELD OF THE INVENTION

10 The present invention relates to gene expression profiles, algorithms to generate gene expression profiles, microarrays comprising nucleic acid sequences representing gene expression profiles, methods of using gene expression profiles and microarrays, and business methods directed to the use of gene expression profiles, microarrays, and algorithms.

15 The present invention further relates to protein expression profiles, algorithms to generate protein expression profiles, microarrays comprising protein-capture agents that bind proteins comprising protein expression profiles, methods of using protein expression profiles and microarrays, and business methods directed to the use of protein expression profiles, microarrays, and algorithms.

BACKGROUND OF THE INVENTION

20 The identification and analysis of a particular gene or protein generally has been accomplished by experiments directed specifically towards that gene or protein. With the recent advances, however, in the sequencing of the human genome, the challenge is to decipher the expression, function, and regulation of thousands of genes, which cannot be realistically accomplished by analyzing one gene or protein at a time. To address this
25 situation, DNA microarray technology has proven to be a valuable tool. By taking advantage of the sequence information obtained from DNA microarrays, the expression and functional relationship of thousands of genes may be resolved.

The expression profiles of thousands of genes have been examined *en masse* via cDNA and oligonucleotide microarrays. *See, e.g.,* Lockhart et al., NUCLEIC ACIDS SYMP. SER. 11-12 (1998); Shalon et al., 46 PATHOL. BIOL. 107-109 (1998); Schena et al., 16 TRENDS BIOTECHNOL. 301-306 (1998). Several studies have analyzed gene expression profiles in yeast, mammalian cell lines, and disease tissues. *See, e.g.,* Welford et al., 26 NUCLEIC ACIDS RES. 3059-3065 (1998); Cho et al., 2 MOL. CELL 65-73 (1997); Heller et al., 94 PROC. NATL.

ACAD. SCI. USA 2150-2155 (1997); Schena et al., 93 PROC. NATL. ACAD. SCI. USA 10614-10619 (1996).

Microarray technology provides the means to decipher the function of a particular gene based on its expression profile and alterations in its expression levels. In addition, this technology may be used to define the components of cellular pathways as well as the regulation of these cellular components. High-density oligonucleotide microarrays may be used to simultaneously monitor thousands of genes or possibly entire genomes (*e.g.*, *Saccharomyces cerevisiae*).

Microarrays may also be used for genetic and physical mapping of genomes, DNA sequencing, genetic diagnosis, and genotyping of organisms. Microarrays may be used to determine a medical diagnosis. For example, the identity of a pathogenic microorganism may be established unambiguously by hybridizing a patient sample to a microarray containing the genes from many types of known pathogenic DNA. A similar technique may also be used for genotyping an organism. For genetic diagnostics, a microarray may contain multiple forms of a mutated gene or multiple genes associated with a particular disease. The microarray may then be probed with DNA or RNA, isolated from a patient sample (*e.g.*, blood sample), which may hybridize to one of the mutated or disease genes.

Microarrays containing molecular expression markers or predictor genes may be used to confirm tissue or cell identifications. In addition, disease progression may be monitored by analyzing the expression patterns of the predictor genes in disease tissues. An alteration in gene expression may be used to define the specific disease state and stage of the disease. Monitoring the efficacy of certain drug regimens may also be accomplished by analyzing the expression patterns of the predictor genes. For example, decreases or increases in gene expression may be indicative of the efficacy of a particular drug.

Generally, oligonucleotide probes are used to detect complementary nucleic acid sequences in a particular tissue or cell type. The oligonucleotide probes may be covalently attached to a support, and arrays of oligonucleotide probes immobilized on solid supports are used to detect specific nucleic acid sequences. To assess gene expression in a given tissue or cell sample, DNA or RNA is isolated from the tissue or cell, labeled with a fluorescent dye, and then hybridized to the DNA microarray. The microarray may contain hundreds to thousands of DNA sequences selected from cDNA libraries, genomic DNA, or expressed sequence tags (ESTs). These DNA sequences may be spotted or synthesized onto the support and then crosslinked to the support by ultraviolet radiation. Following hybridization, the

fluorescence intensities of the microarray are analyzed, and these measurements are then used to determine the presence or relative quantity of a particular gene within the sample. This hybridization pattern is used to generate a gene expression profile of the target tissue or cell type.

Thus, differences in gene expression profiles may be used to identify the pathology of many diseases involving alterations of gene expression. The types of genes and their expression levels may distinguish normal tissue and diseased tissue. For example, cancer cells evolve from normal cells into highly invasive, metastatic malignancies, which frequently are induced by activation of oncogenes, or inactivation of tumor suppressor genes.

Differentially expressed sequences can serve as markers or predictors of the transformed state and are, therefore, of potential value in the diagnosis and classification of tumors. The assessment of expression profiles may provide meaningful information with respect to tumor type and stage, treatment methods, and prognosis.

SUMMARY OF THE INVENTION

The present invention relates to gene expression profiles, algorithms to generate gene expression profiles, microarrays comprising nucleic acid sequences representing gene expression profiles, methods of using gene expression profiles and microarrays, and business methods directed to the use of gene expression profiles, microarrays, and algorithms.

In a specific embodiment of the present invention, the gene expression profile may be an endothelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 48; SEQ ID NO: 63; SEQ ID NO: 70; SEQ ID NO: 82; SEQ ID NO: 94; and SEQ ID NO: 144. With regard to this gene expression profile, the present invention provides a microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile.

In another embodiment of the present invention, the gene expression profile may be a muscle cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group consisting of SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 54; SEQ ID NO: 55; and SEQ ID NO: 69. With regard to this gene expression profile, the present invention provides a microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile.

In an alternative embodiment of the present invention, the gene expression profile may be a primary cell gene expression profile comprising one or more nucleic acid sequences or complementary sequences thereof, or portions of said nucleic acid sequences or complementary sequences thereof, selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 43; SEQ ID NO: 44; SEQ ID NO: 45; SEQ ID NO: 46; SEQ ID NO: 47; SEQ ID NO: 48; SEQ ID NO: 49; SEQ ID NO: 50; SEQ ID NO: 51; SEQ ID NO: 52; SEQ ID NO: 53; SEQ ID NO: 54; SEQ ID NO: 55; SEQ ID NO: 56; SEQ ID NO: 57; SEQ ID NO: 58; SEQ ID NO: 59; SEQ ID NO: 60; SEQ ID NO: 61; SEQ ID NO: 62; SEQ ID NO: 63; SEQ ID NO: 64; SEQ ID NO: 65; SEQ ID NO: 66; SEQ ID NO: 67; SEQ ID NO: 68; SEQ ID NO: 69; SEQ ID NO: 70; SEQ ID NO: 71; SEQ ID NO: 72; SEQ ID NO: 73; SEQ ID NO: 74; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ ID NO: 78; SEQ ID NO: 79; SEQ ID NO: 80; SEQ ID NO: 81; SEQ ID NO: 82; SEQ ID NO: 83; SEQ ID NO: 84; SEQ ID NO: 85; SEQ ID NO: 86; SEQ ID NO: 87; SEQ ID NO: 88; SEQ ID NO: 89; SEQ ID NO: 90; SEQ ID NO: 91; SEQ ID NO: 92; SEQ ID NO: 93; SEQ ID NO: 94; SEQ ID NO: 95; SEQ ID NO: 96; SEQ ID NO: 97; SEQ ID

NO: 98; SEQ ID NO: 99; SEQ ID NO: 100; SEQ ID NO: 101; SEQ ID NO: 102; SEQ ID
 NO: 103; SEQ ID NO: 104; SEQ ID NO: 105; SEQ ID NO: 106; SEQ ID NO: 107; SEQ ID
 NO: 108; SEQ ID NO: 109; SEQ ID NO: 110; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID
 NO: 113; SEQ ID NO: 114; SEQ ID NO: 115; SEQ ID NO: 116; SEQ ID NO: 118; SEQ ID
 5 NO: 119; SEQ ID NO: 120; SEQ ID NO: 121; SEQ ID NO: 122; SEQ ID NO: 123; SEQ ID
 NO: 124; SEQ ID NO: 125; SEQ ID NO: 126; SEQ ID NO: 127; SEQ ID NO: 128; SEQ ID
 NO: 129; SEQ ID NO: 130; SEQ ID NO: 131; SEQ ID NO: 132; SEQ ID NO: 133; SEQ ID
 NO: 134; SEQ ID NO: 135; SEQ ID NO: 136; SEQ ID NO: 137; SEQ ID NO: 138; SEQ ID
 NO: 139; SEQ ID NO: 140; SEQ ID NO: 141; SEQ ID NO: 142; SEQ ID NO: 143; SEQ ID
 10 NO: 144; SEQ ID NO: 145; SEQ ID NO: 146; SEQ ID NO: 147; SEQ ID NO: 148; SEQ ID
 NO: 149; SEQ ID NO: 150; SEQ ID NO: 151; SEQ ID NO: 152; SEQ ID NO: 153; SEQ ID
 NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID
 NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID
 NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID
 15 NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID
 NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID
 NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID
 NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186.

With regard to this gene expression profile, the present invention provides a
 20 microarray comprising one or more protein-capture agents that specifically bind to all or a
 portion of one or more of the proteins encoded by the genes comprising the gene expression
 profile.

In a further aspect of the present invention, the gene expression profile may be
 an epithelial cell gene expression profile comprising one or more nucleic acid sequences or
 25 complementary sequences thereof, or portions of said nucleic acid sequences or
 complementary sequences thereof, selected from the group consisting of SEQ ID NO: 47;
 SEQ ID NO: 60; SEQ ID NO: 67; SEQ ID NO: 73; SEQ ID NO: 75; SEQ ID NO: 76; SEQ
 ID NO: 77; SEQ ID NO: 78; SEQ ID NO: 80; SEQ ID NO: 96; SEQ ID NO: 98; SEQ ID
 NO: 99; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 123; SEQ ID NO: 127; SEQ ID
 30 NO: 131; SEQ ID NO: 150; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID
 NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID
 NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID
 NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID

NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186. With regard to this gene expression profile, the present invention provides a
5 microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile.

In yet another embodiment, a keratinocyte epithelial cell gene expression profile may comprise one or more nucleic acid sequences or complementary sequences thereof, or
10 portions of said nucleic acid sequences or complementary sequences thereof, selected from the group consisting of SEQ ID NO: 187; SEQ ID NO: 188; SEQ ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ ID NO: 192; SEQ ID NO: 193; SEQ ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ ID NO: 197; SEQ ID NO: 198; SEQ ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ ID NO: 202; SEQ ID NO: 203; SEQ ID NO: 204; SEQ ID NO:
15 205; SEQ ID NO: 206; SEQ ID NO: 207; SEQ ID NO: 208; SEQ ID NO: 209; SEQ ID NO: 210; and SEQ ID NO: 211. With regard to this gene expression profile, the present invention provides a microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile.

20 The present invention also provides a mammary epithelial cell gene expression profile comprising one or more nucleic acid sequences or complementary sequences thereof, or portions of said nucleic acid sequences or complementary sequences thereof, selected from the group consisting of SEQ ID NO: 78; SEQ ID NO: 212; SEQ ID NO: 213; SEQ ID NO: 216; SEQ ID NO: 225; SEQ ID NO: 226; SEQ ID NO: 227; SEQ ID NO: 239; SEQ ID NO:
25 271; SEQ ID NO: 285; and SEQ ID NO: 289. With regard to this gene expression profile, the present invention provides a microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile.

In an alternative embodiment, a bronchial epithelial cell gene expression profile may
30 comprise one or more nucleic acid sequences or complementary sequences thereof, or portions of said nucleic acid sequences or complementary sequences thereof, selected from the group consisting of SEQ ID NO: 27; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 169; SEQ ID NO: 214; SEQ ID NO: 215; SEQ ID NO: 223; SEQ ID NO: 224; SEQ ID NO:

241; SEQ ID NO: 243; SEQ ID NO: 244; SEQ ID NO: 255; SEQ ID NO: 256; SEQ ID NO: 261; and SEQ ID NO: 314. With regard to this gene expression profile, the present invention provides a microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile.

The present invention also provides a prostate epithelial cell gene expression profile, which may comprise one or more nucleic acid sequences or complementary sequences thereof, or portions of said nucleic acid sequences or complementary sequences thereof, selected from the group consisting of SEQ ID NO: 64; SEQ ID NO: 217; SEQ ID NO: 218; SEQ ID NO: 259; SEQ ID NO: 293; SEQ ID NO: 302; and SEQ ID NO: 320. With regard to this gene expression profile, the present invention provides a microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile.

In yet another embodiment, a renal cortical epithelial cell gene expression profile may comprise one or more nucleic acid sequences or complementary sequences thereof, or portions of said nucleic acid sequences or complementary sequences thereof, selected from the group consisting of SEQ ID NO: 49; SEQ ID NO: 57; SEQ ID NO: 104; SEQ ID NO: 123; SEQ ID NO: 160; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 219; SEQ ID NO: 267; SEQ ID NO: 270; SEQ ID NO: 279; SEQ ID NO: 280; SEQ ID NO: 283; SEQ ID NO: 291; SEQ ID NO: 305; SEQ ID NO: 307; SEQ ID NO: 310; SEQ ID NO: 313; SEQ ID NO: 325; SEQ ID NO: 326; and SEQ ID NO: 327. With regard to this gene expression profile, the present invention provides a microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile.

The present invention further provides a renal proximal tubule epithelial cell gene expression profile comprising one or more nucleic acid sequences or complementary sequences thereof, or portions of said nucleic acid sequences or complementary sequences thereof, selected from the group consisting of SEQ ID NO: 106; SEQ ID NO: 138; SEQ ID NO: 158; SEQ ID NO: 228; SEQ ID NO: 236; SEQ ID NO: 242; SEQ ID NO: 250; SEQ ID NO: 258; SEQ ID NO: 260; SEQ ID NO: 262; SEQ ID NO: 266; SEQ ID NO: 272; SEQ ID NO: 273; SEQ ID NO: 274; SEQ ID NO: 275; SEQ ID NO: 276; SEQ ID NO: 278; SEQ ID NO: 284; SEQ ID NO: 288; SEQ ID NO: 295; SEQ ID NO: 296; SEQ ID NO: 297; SEQ ID NO: 299; SEQ ID NO: 300; SEQ ID NO: 301; SEQ ID NO: 306; SEQ ID NO: 308; SEQ ID

NO: 309; SEQ ID NO: 311; SEQ ID NO: 316; SEQ ID NO: 318; SEQ ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 328; and SEQ ID NO: 329. With regard to this gene expression profile, the present invention provides a microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile.

In a specific embodiment, a small airway epithelial cell gene expression profile may comprise one or more nucleic acid sequences or complementary sequences thereof, or portions of said nucleic acid sequences or complementary sequences thereof, selected from the group consisting of SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 183; SEQ ID NO: 220; SEQ ID NO: 221; SEQ ID NO: 222; SEQ ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ ID NO: 232; SEQ ID NO: 233; SEQ ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 237; SEQ ID NO: 238; SEQ ID NO: 240; SEQ ID NO: 245; SEQ ID NO: 246; SEQ ID NO: 247; SEQ ID NO: 248; SEQ ID NO: 249; SEQ ID NO: 251; SEQ ID NO: 252; SEQ ID NO: 254; SEQ ID NO: 257; SEQ ID NO: 263; SEQ ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 268; SEQ ID NO: 269; SEQ ID NO: 270; SEQ ID NO: 277; SEQ ID NO: 281; SEQ ID NO: 282; SEQ ID NO: 286; SEQ ID NO: 287; SEQ ID NO: 290; SEQ ID NO: 294; SEQ ID NO: 298; SEQ ID NO: 303; SEQ ID NO: 312; SEQ ID NO: 315; SEQ ID NO: 317; and SEQ ID NO: 319. With regard to this gene expression profile, the present invention provides a microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile.

The present invention also provides a renal epithelial cell gene expression profile comprising one or more nucleic acid sequences or complementary sequences thereof, or portions of said nucleic acid sequences or complementary sequences thereof, selected from the group consisting of SEQ ID NO: 37; SEQ ID NO: 253; SEQ ID NO: 304; SEQ ID NO: 323; and SEQ ID NO: 324. With regard to this gene expression profile, the present invention provides a microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile.

In yet another embodiment of the present invention, the gene expression profiles may comprise one or more genes, wherein said gene expression profile is generated from a cell type selected from the group comprising coronary artery endothelium, umbilical artery endothelium, umbilical vein endothelium, aortic endothelium, dermal microvascular

endothelium, pulmonary artery endothelium, myometrium microvascular endothelium, keratinocyte epithelium, bronchial epithelium, mammary epithelium, prostate epithelium, renal cortical epithelium, renal proximal tubule epithelium, small airway epithelium, renal epithelium, umbilical artery smooth muscle, neonatal dermal fibroblast, pulmonary artery smooth muscle, dermal fibroblast, neural progenitor cells, skeletal muscle, astrocytes, aortic smooth muscle, mesangial cells, coronary artery smooth muscle, bronchial smooth muscle, uterine smooth muscle, lung fibroblast, osteoblasts, and prostate stromal cells.

In another embodiment of the present invention, the microarray may be a microarray comprising an endothelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 48; SEQ ID NO: 63; SEQ ID NO: 70; SEQ ID NO: 82; SEQ ID NO: 94; and SEQ ID NO: 144.

The microarrays of the present invention may also comprise a microarray comprising a muscle cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 54; SEQ ID NO: 55; and SEQ ID NO: 69.

Also within the scope of the present invention are microarrays comprising a primary cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO:

16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21;
SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ
ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID
NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO:
5 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 43;
SEQ ID NO: 44; SEQ ID NO: 45; SEQ ID NO: 46; SEQ ID NO: 47; SEQ ID NO: 48; SEQ
ID NO: 49; SEQ ID NO: 50; SEQ ID NO: 51; SEQ ID NO: 52; SEQ ID NO: 53; SEQ ID
NO: 54; SEQ ID NO: 55; SEQ ID NO: 56; SEQ ID NO: 57; SEQ ID NO: 58; SEQ ID NO:
59; SEQ ID NO: 60; SEQ ID NO: 61; SEQ ID NO: 62; SEQ ID NO: 63; SEQ ID NO: 64;
10 SEQ ID NO: 65; SEQ ID NO: 66; SEQ ID NO: 67; SEQ ID NO: 68; SEQ ID NO: 69; SEQ
ID NO: 70; SEQ ID NO: 71; SEQ ID NO: 72; SEQ ID NO: 73; SEQ ID NO: 74; SEQ ID
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80; SEQ ID NO: 81; SEQ ID NO: 82; SEQ ID NO: 83; SEQ ID NO: 84; SEQ ID NO: 85;
SEQ ID NO: 86; SEQ ID NO: 87; SEQ ID NO: 88; SEQ ID NO: 89; SEQ ID NO: 90; SEQ
15 ID NO: 91; SEQ ID NO: 92; SEQ ID NO: 93; SEQ ID NO: 94; SEQ ID NO: 95; SEQ ID
NO: 96; SEQ ID NO: 97; SEQ ID NO: 98; SEQ ID NO: 99; SEQ ID NO: 100; SEQ ID NO:
101; SEQ ID NO: 102; SEQ ID NO: 103; SEQ ID NO: 104; SEQ ID NO: 105; SEQ ID NO:
106; SEQ ID NO: 107; SEQ ID NO: 108; SEQ ID NO: 109; SEQ ID NO: 110; SEQ ID NO:
111; SEQ ID NO: 112; SEQ ID NO: 113; SEQ ID NO: 114; SEQ ID NO: 115; SEQ ID NO:
20 116; SEQ ID NO: 118; SEQ ID NO: 119; SEQ ID NO: 120; SEQ ID NO: 121; SEQ ID NO:
122; SEQ ID NO: 123; SEQ ID NO: 124; SEQ ID NO: 125; SEQ ID NO: 126; SEQ ID NO:
127; SEQ ID NO: 128; SEQ ID NO: 129; SEQ ID NO: 130; SEQ ID NO: 131; SEQ ID NO:
132; SEQ ID NO: 133; SEQ ID NO: 134; SEQ ID NO: 135; SEQ ID NO: 136; SEQ ID NO:
137; SEQ ID NO: 138; SEQ ID NO: 139; SEQ ID NO: 140; SEQ ID NO: 141; SEQ ID NO:
25 142; SEQ ID NO: 143; SEQ ID NO: 144; SEQ ID NO: 145; SEQ ID NO: 146; SEQ ID NO:
147; SEQ ID NO: 148; SEQ ID NO: 149; SEQ ID NO: 150; SEQ ID NO: 151; SEQ ID NO:
152; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO:
157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO:
162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO:
30 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO:
172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO:
177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO:
182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186.

In a further embodiment, the microarray may be a microarray comprising an epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group

5 consisting of SEQ ID NO: 47; SEQ ID NO: 60; SEQ ID NO: 67; SEQ ID NO: 73; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ ID NO: 78; SEQ ID NO: 80; SEQ ID NO: 96; SEQ ID NO: 98; SEQ ID NO: 99; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 123; SEQ ID NO: 127; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159;
10 SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184;
15 SEQ ID NO: 185; and SEQ ID NO: 186.

In yet another embodiment, a microarray may comprise a keratinocyte epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group

20 consisting of SEQ ID NO: 187; SEQ ID NO: 188; SEQ ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ ID NO: 192; SEQ ID NO: 193; SEQ ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ ID NO: 197; SEQ ID NO: 198; SEQ ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ ID NO: 202; SEQ ID NO: 203; SEQ ID NO: 204; SEQ ID NO: 205; SEQ ID NO: 206; SEQ ID NO: 207; SEQ ID NO: 208; SEQ ID NO: 209; SEQ ID NO: 210; and
25 SEQ ID NO: 211.

The present invention also provides a microarray comprising a mammary epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group

30 consisting of SEQ ID NO: 78; SEQ ID NO: 212; SEQ ID NO: 213; SEQ ID NO: 216; SEQ ID NO: 225; SEQ ID NO: 226; SEQ ID NO: 227; SEQ ID NO: 239; SEQ ID NO: 271; SEQ ID NO: 285; and SEQ ID NO: 289.

In an alternative embodiment, a microarray may comprise a bronchial epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group

5 consisting of SEQ ID NO: 27; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 169; SEQ ID NO: 214; SEQ ID NO: 215; SEQ ID NO: 223; SEQ ID NO: 224; SEQ ID NO: 241; SEQ ID NO: 243; SEQ ID NO: 244; SEQ ID NO: 255; SEQ ID NO: 256; SEQ ID NO: 261; and SEQ ID NO: 314.

The present invention also provides a microarray comprising a prostate epithelial cell
10 gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 64; SEQ ID NO: 217; SEQ ID NO: 218; SEQ ID NO: 259; SEQ ID NO: 293; SEQ ID NO: 302; and SEQ ID NO: 320.

15 In yet another embodiment, a microarray comprises a renal cortical epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 49; SEQ ID NO: 57; SEQ ID NO: 104; SEQ ID NO: 123; SEQ ID
20 NO: 160; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 219; SEQ ID NO: 267; SEQ ID NO: 270; SEQ ID NO: 279; SEQ ID NO: 280; SEQ ID NO: 283; SEQ ID NO: 291; SEQ ID NO: 305; SEQ ID NO: 307; SEQ ID NO: 310; SEQ ID NO: 313; SEQ ID NO: 325; SEQ ID NO: 326; and SEQ ID NO: 327.

The present invention further provides a microarray comprising a renal proximal
25 tubule epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 106; SEQ ID NO: 138; SEQ ID NO: 158; SEQ ID NO: 228; SEQ ID NO: 236; SEQ ID NO: 242; SEQ ID NO: 250; SEQ ID NO: 258; SEQ ID NO: 260;
30 SEQ ID NO: 262; SEQ ID NO: 266; SEQ ID NO: 272; SEQ ID NO: 273; SEQ ID NO: 274; SEQ ID NO: 275; SEQ ID NO: 276; SEQ ID NO: 278; SEQ ID NO: 284; SEQ ID NO: 288; SEQ ID NO: 295; SEQ ID NO: 296; SEQ ID NO: 297; SEQ ID NO: 299; SEQ ID NO: 300; SEQ ID NO: 301; SEQ ID NO: 306; SEQ ID NO: 308; SEQ ID NO: 309; SEQ ID NO: 311;

SEQ ID NO: 316; SEQ ID NO: 318; SEQ ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 328; and SEQ ID NO: 329.

In a specific embodiment, a microarray may comprise a small airway epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially
5 homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 183; SEQ ID NO: 220; SEQ ID NO: 221; SEQ ID NO: 222; SEQ ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ ID NO: 232; SEQ ID NO: 233; SEQ ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 237; SEQ
10 ID NO: 238; SEQ ID NO: 240; SEQ ID NO: 245; SEQ ID NO: 246; SEQ ID NO: 247; SEQ ID NO: 248; SEQ ID NO: 249; SEQ ID NO: 251; SEQ ID NO: 252; SEQ ID NO: 254; SEQ ID NO: 257; SEQ ID NO: 263; SEQ ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 268; SEQ ID NO: 269; SEQ ID NO: 270; SEQ ID NO: 277; SEQ ID NO: 281; SEQ ID NO: 282; SEQ ID NO: 286; SEQ ID NO: 287; SEQ ID NO: 290; SEQ ID NO: 294; SEQ ID NO: 298; SEQ
15 ID NO: 303; SEQ ID NO: 312; SEQ ID NO: 315; SEQ ID NO: 317; and SEQ ID NO: 319.

The present invention also provides a microarray comprising a renal epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group
20 consisting of SEQ ID NO: 37; SEQ ID NO: 253; SEQ ID NO: 304; SEQ ID NO: 323; and SEQ ID NO: 324.

In yet another embodiment, a microarray may comprise one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof,
25 selected from the group consisting of SEQ ID NO: 27; SEQ ID NO: 37; SEQ ID NO: 49; SEQ ID NO: 57; SEQ ID NO: 64; SEQ ID NO: 70; SEQ ID NO: 78; SEQ ID NO: 104; SEQ ID NO: 106; SEQ ID NO: 123; SEQ ID NO: 131; SEQ ID NO: 138; SEQ ID NO: 150; SEQ ID NO: 158; SEQ ID NO: 160; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 169; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 183; SEQ ID NO: 187; SEQ ID NO: 188; SEQ
30 ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ ID NO: 192; SEQ ID NO: 193; SEQ ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ ID NO: 197; SEQ ID NO: 198; SEQ ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ ID NO: 202; SEQ ID NO: 203; SEQ ID NO: 204; SEQ ID NO: 205; SEQ ID NO: 206; SEQ ID NO: 207; SEQ ID NO: 208; SEQ

ID NO: 209; SEQ ID NO: 210; SEQ ID NO: 211; SEQ ID NO: 212; SEQ ID NO: 213; SEQ
 ID NO: 214; SEQ ID NO: 215; SEQ ID NO: 216; SEQ ID NO: 217; SEQ ID NO: 218; SEQ
 ID NO: 219; SEQ ID NO: 220; SEQ ID NO: 221; SEQ ID NO: 222; SEQ ID NO: 223; SEQ
 ID NO: 224; SEQ ID NO: 225; SEQ ID NO: 226; SEQ ID NO: 227; SEQ ID NO: 228; SEQ
 5 ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ ID NO: 232; SEQ ID NO: 233; SEQ
 ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 236; SEQ ID NO: 237; SEQ ID NO: 238; SEQ
 ID NO: 239; SEQ ID NO: 240; SEQ ID NO: 241; SEQ ID NO: 242; SEQ ID NO: 243; SEQ
 ID NO: 244; SEQ ID NO: 245; SEQ ID NO: 246; SEQ ID NO: 247; SEQ ID NO: 248; SEQ
 ID NO: 249; SEQ ID NO: 250; SEQ ID NO: 251; SEQ ID NO: 252; SEQ ID NO: 253; SEQ
 10 ID NO: 254; SEQ ID NO: 255; SEQ ID NO: 256; SEQ ID NO: 257; SEQ ID NO: 258; SEQ
 ID NO: 259; SEQ ID NO: 260; SEQ ID NO: 261; SEQ ID NO: 262; SEQ ID NO: 263; SEQ
 ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 266; SEQ ID NO: 267; SEQ ID NO: 268; SEQ
 ID NO: 269; SEQ ID NO: 270; SEQ ID NO: 271; SEQ ID NO: 272; SEQ ID NO: 273; SEQ
 ID NO: 274; SEQ ID NO: 275; SEQ ID NO: 276; SEQ ID NO: 277; SEQ ID NO: 278; SEQ
 15 ID NO: 279; SEQ ID NO: 280; SEQ ID NO: 281; SEQ ID NO: 282; SEQ ID NO: 283; SEQ
 ID NO: 284; SEQ ID NO: 285; SEQ ID NO: 286; SEQ ID NO: 287; SEQ ID NO: 288; SEQ
 ID NO: 289; SEQ ID NO: 290; SEQ ID NO: 291; SEQ ID NO: 293; SEQ ID NO: 294; SEQ
 ID NO: 295; SEQ ID NO: 296; SEQ ID NO: 297; SEQ ID NO: 298; SEQ ID NO: 299; SEQ
 ID NO: 300; SEQ ID NO: 301; SEQ ID NO: 302; SEQ ID NO: 303; SEQ ID NO: 304; SEQ
 20 ID NO: 305; SEQ ID NO: 306; SEQ ID NO: 307; SEQ ID NO: 308; SEQ ID NO: 309; SEQ
 ID NO: 310; SEQ ID NO: 311; SEQ ID NO: 312; SEQ ID NO: 313; SEQ ID NO: 314; SEQ
 ID NO: 315; SEQ ID NO: 316; SEQ ID NO: 317; SEQ ID NO: 318; SEQ ID NO: 320; SEQ
 ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 323; SEQ ID NO: 324; SEQ ID NO: 325; SEQ
 ID NO: 326; SEQ ID NO: 327; SEQ ID NO: 328; and SEQ ID NO: 329.

25 In another embodiment, the present invention provides a microarray comprising a
 gene expression profile comprising one or more genes or oligonucleotide probes obtained
 therefrom, wherein said gene expression profile is generated from a cell type selected from
 the group comprising coronary artery endothelium, umbilical artery endothelium, umbilical
 vein endothelium, aortic endothelium, dermal microvascular endothelium, pulmonary artery
 30 endothelium, myometrium microvascular endothelium, keratinocyte epithelium, bronchial
 epithelium, mammary epithelium, prostate epithelium, renal cortical epithelium, renal
 proximal tubule epithelium, small airway epithelium, renal epithelium, umbilical artery
 smooth muscle, neonatal dermal fibroblast, pulmonary artery smooth muscle, dermal

fibroblast, neural progenitor cells, skeletal muscle, astrocytes, aortic smooth muscle, mesangial cells, coronary artery smooth muscle, bronchial smooth muscle, uterine smooth muscle, lung fibroblast, osteoblasts, and prostate stromal cells.

This invention also relates to methods of doing business comprising the steps of
5 determining the level of RNA expression for an RNA sample, wherein the RNA sample is amplified, fluorescently labeled, and hybridized to a microarray containing a plurality of nucleic acid sequences, and wherein the microarray is scanned for fluorescence; normalizing the expression levels using an algorithm, and scoring the RNA sample against a gene expression profile database. In one embodiment, the RNA sample is obtained from a patient
10 and the patient sample includes, but is not limited to, blood, amniotic fluid, plasma, semen, bone marrow, and tissue biopsy.

In another aspect of this method, the algorithm is either the MaxCor algorithm or the Mean Log Ratio algorithm. The invention described herein further provides algorithms useful for generating gene expression profiles. Specifically, the present invention provides
15 for either the MaxCor algorithm or the Mean Log Ratio algorithm to generate a gene expression profile.

The present invention also relates to a method of constructing a gene expression profile comprising the steps of hybridizing prepared RNA samples to a microarray containing a plurality of known nucleic acid sequences representing genes of a particular organism;
20 obtaining an expression level for each gene on a microarray; and normalizing the expression level for each gene on a microarray to control standards.

In a further aspect, the method of constructing a gene expression profile comprises the steps applying an algorithm to each of the normalized gene expression levels; performing a correlation analysis for all normalized gene expression microarrays within a group of
25 samples; establishing a gene expression profile using a signature extraction algorithm; and validating the gene expression profile.

In one embodiment, the algorithm of the profile construction method is the MaxCor algorithm. Specifically, the MaxCor algorithm is used to generate a numeric value that is assigned to each gene based upon the expression level contained on the microarray. In one
30 embodiment, the numeric value is between the range of (-1,+1). In particular, a negative numeric value represents a gene with relatively lower expression; a zero numeric value represents no relative gene expression difference; and a positive numeric value represents a gene with relatively higher expression.

In one embodiment, the numeric value is between the range of (-2,+2). In particular, a negative numeric value represents a gene with relatively lower expression; a zero numeric value represents no relative gene expression difference; and a positive numeric value represents a gene with relatively higher expression.

5 In another embodiment, the algorithm of the profile construction method is the Mean Log Ratio algorithm. Specifically, the Mean Log Ratio algorithm is used to generate a numeric value that is assigned to each gene based upon the expression level contained on the microarray. In one embodiment, the numeric value is between the range of (-1,+1). In particular, a negative numeric value represents a gene with relatively lower expression; a zero
10 numeric value represents no relative gene expression difference; and a positive numeric value represents a gene with relatively higher expression.

In one embodiment, the numeric value is between the range of (-2,+2). In particular, a negative numeric value represents a gene with relatively lower expression; a zero numeric value represents no relative gene expression difference; and a positive numeric value
15 represents a gene with relatively higher expression.

The present invention further provides a method, in a computer system, for constructing and analyzing a gene expression profile comprising the steps of inputting gene expression data for each of a plurality of genes; normalizing expression data by transforming said data into log ratio values; filtering weak differential values; applying an algorithm to
20 each of said normalized gene expression values; performing a classification analysis for all normalized gene expression values; establishing a gene expression profile; and validating the gene expression profile. The algorithm may be the MaxCor algorithm or the Mean Log Ratio algorithm.

This invention is also related to computer programs for constructing and analyzing a
25 gene expression signature. These computer programs may comprise computer code that receives as input gene expression data for a plurality of genes; computer code that normalizes expression data by transforming the data into log ratio values; computer code that applies an algorithm to each of the normalized gene expression values; computer code that performs a correlation analysis for the normalized gene expression values; computer code that
30 establishes and validates the gene expression profile; and computer readable medium that stores computer code. The computer program may utilize the MaxCor algorithm or the Mean Log Ratio algorithm for gene expression profile analysis.

The present invention also provides methods for identifying the phenotype of an unknown cell. This method comprises applying an algorithm to extract a gene expression profile from gene expression data generated from the cell; and matching the gene expression profile to a gene expression profile generated from a cell of known phenotype. In one embodiment, the algorithm is the MaxCor algorithm. In an alternative embodiment, the algorithm is the Mean Log Ratio algorithm.

In a particular embodiment, the application of an algorithm to extract a gene expression profile comprises setting a cutoff value for expression relative to normalized values, wherein said cutoff value is at least about two-fold induction above the normalized values. Moreover, the matching step may be performed using a database comprising one or more gene expression profiles generated from cells of known phenotype.

The present invention further provides methods for distinguishing cell types comprising using an algorithm to generate a gene expression profile from a biological sample; and matching said generated gene expression profile to a gene expression profile of a specific cell type. In one embodiment, the algorithm is the MaxCor algorithm. In an alternative embodiment, the algorithm is the Mean Log Ratio algorithm.

In a further embodiment, the specific cell type is selected from the group consisting of coronary artery endothelium, umbilical artery endothelium, umbilical vein endothelium, aortic endothelium, dermal microvascular endothelium, pulmonary artery endothelium, myometrium microvascular endothelium, keratinocyte epithelium, bronchial epithelium, mammary epithelium, prostate epithelium, renal cortical epithelium, renal proximal tubule epithelium, small airway epithelium, renal epithelium, umbilical artery smooth muscle, neonatal dermal fibroblast, pulmonary artery smooth muscle, dermal fibroblast, neural progenitor cells, skeletal muscle, astrocytes, aortic smooth muscle, mesangial cells, coronary artery smooth muscle, bronchial smooth muscle, uterine smooth muscle, lung fibroblast, osteoblasts, and prostate stromal cells.

In a specific embodiment, the present invention provides a method for determining the phenotype of a cell comprising the steps of applying an algorithm to extract a protein expression profile from protein expression data generated from the cell and matching the protein expression profile to a protein expression profile generated from a cell of known phenotype.

In one embodiment, the algorithm is the MaxCor algorithm. In an alternative embodiment, the algorithm is the Mean Log Ratio algorithm. In yet another embodiment, the

applying step comprises setting a cutoff value for expression relative to normalized values, wherein said cutoff value is at least about two-fold induction above the normalized values. In yet another embodiment, the matching step is performed using a database comprising one or more protein expression profiles generated from cells of known phenotype.

5 The present invention provides a method for distinguishing cell types comprising the step of matching a protein expression profile generated from a biological sample using an algorithm to a known protein expression profile of a specific cell type. In one embodiment, the algorithm is the MaxCor algorithm. In an alternative embodiment, the algorithm is the Mean Log Ratio algorithm.

10 In a further embodiment, the specific cell type is selected from the group consisting of coronary artery endothelium, umbilical artery endothelium, umbilical vein endothelium, aortic endothelium, dermal microvascular endothelium, pulmonary artery endothelium, myometrium microvascular endothelium, keratinocyte epithelium, bronchial epithelium, mammary epithelium, prostate epithelium, renal cortical epithelium, renal proximal tubule
15 epithelium, small airway epithelium, renal epithelium, umbilical artery smooth muscle, neonatal dermal fibroblast, pulmonary artery smooth muscle, dermal fibroblast, neural progenitor cells, skeletal muscle, astrocytes, aortic smooth muscle, mesangial cells, coronary artery smooth muscle, bronchial smooth muscle, uterine smooth muscle, lung fibroblast, osteoblasts, and prostate stromal cells.

20

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1. Laser capture microdissection (LCM) of 10 μ m Nissl-stained sections of adult rat large and small dorsal root ganglion (DRG) neurons. The arrows indicate DRG neurons to be captured (top panel). The middle and bottom panels show successful capture
25 and film transfer respectively.

Figure 2a-2b. Microarray of cDNA expression patterns of small (S) and large (L) neurons. Figure 2a is an example of the cDNA microarray data obtained. Boxed in white is an identical region of the microarray for L1 and S1 samples that is enlarged (shown directly below). In Figure 2b, scatter plots are shown that demonstrate the correlation between
30 independent amplifications of S1 vs. S2, S1 vs. S3, L1 vs. L2, and L (L1 and L2) vs. S (S1, S2, and S3).

Figure 3. Preferentially expressed mRNAs identified in small DRG neurons. The ratio value describes the mean fluorescence intensity ratio of the small DRG neurons as compared to the large DRG neurons.

Figure 4. Preferentially expressed mRNAs identified in large DRG neurons. The ratio value describes the mean fluorescence intensity ratio of the large DRG neurons as compared to the small DRG neurons.

Figure 5. Representative fields of *in situ* hybridization of rat DRG with selected cDNAs. The sections were Nissl-counterstained. The left panel shows results with radiolabeled probes encoding neurofilament-high (NF-H), neurofilament-low (NF-L) and β -1 subunit of the voltage-gated sodium channel (SCN β -1). Arrows in the left panel denote identifiable small neurons. The right panel shows representative fields from radiolabeled probes encoding calcitonin gene-related product (CGRP), voltage-gated sodium channel (NaV), and phospholipase C delta-4 (PLC). Arrows in the right panel denote identifiable large neurons. The large arrowhead denotes a large neuron which is also labeled.

Figures 6. *In situ* hybridization of selected cDNAs identified in small DRG neurons and large DRG neurons. Based on quantitative measurements comparing the overall intensity of signal in small and large neurons and the percentage of cells labeled within the total population of either small or large neurons, the preferential expression of these mRNAs was demonstrated.

Figure 7. Profile extraction analysis of several primary cell types. Clustering analysis of the gene expression profiles of the primary cell samples confirmed that these cell types could be classified into three groups: endothelial, epithelial, and muscle cell.

Figure 8. Cluster analysis of the 30 gene expression vectors using the hclust algorithm in the S-plus statistical package (MathSoft, Inc., Cambridge, MA). The hclust algorithm groups together primary cells with similar gene expression patterns. The three sample groups (endothelial, epithelial, and muscle cells) were easily separated.

Figure 9a-9t. The gene expression profile of human primary cells. The profile represents 459 genes identified from 30 primary cell types. The sequence source (Seq. Source) is the gene database (GB: GenBank; INCYTE: Incyte Genomes) from which the sequence was selected. The endothelial, epithelial, and muscle profile values are the numeric representation of the specific profile. The p-value is based on the Kruskal-Wallis rank test in which smaller p-values represent clones with higher discriminate power for classifying samples. The source description identifies the particular gene.

Figure 10a-10c. The gene expression profile of endothelial cells. The sequence source (Seq. Source) is the gene database (GB: GenBank; INCYTE: Incyte Genomes) from which the sequence was selected. The endothelial, epithelial, and muscle profile values are the numeric representation of the specific profile. The p-value is based on the Kruskal-Wallis rank test in which smaller p-values represent clones with higher discriminate power for classifying samples. The source description identifies the particular gene.

Figure 11a-11c. The gene expression profile of epithelial cells. The sequence source (Seq. Source) is the gene database (GB: GenBank; INCYTE: Incyte Genomes) from which the sequence was selected. The endothelial, epithelial, and muscle profile values are the numeric representation of the specific profile. The p-value is based on the Kruskal-Wallis rank test in which smaller p-values represent clones with higher discriminate power for classifying samples. The source description identifies the particular gene.

Figure 12a-12b. The gene expression profile of muscle cells. The sequence source (Seq. Source) is the gene database (GB: GenBank; INCYTE: Incyte Genomes) from which the sequence was selected. The endothelial, epithelial, and muscle profile values are the numeric representation of the specific profile. The p-value is based on the Kruskal-Wallis rank test in which smaller p-values represent clones with higher discriminate power for classifying samples. The source description identifies the particular gene.

Figure 13. The profile vectors (endothelial, epithelial, and muscle) generated by using the Mean Log Ratio and MaxCor algorithms are plotted graphically. The numbers are plotted according to the color bar. Numbers in the middle are plotted with colors in between as indicated.

Figure 14. Self-validation analysis using the Mean Log Ratio algorithm. Each of the 30 samples was scored against the three expression profiles generated by using all 30 samples. The scores are plotted on the bar chart (white – endothelial, black – epithelial, hatched – muscle). The order of the primary cells is listed in Figure 7.

Figure 15. Omit-one analysis using the Mean Log Ratio algorithm. Each of the 30 samples was scored against the three expression profiles generated by using all but the sample omitted. The scores are plotted on the bar chart (white – endothelial, black – epithelial, hatched – muscle). The order of the primary cells is listed on Figure 7.

Figure 16. Self-validation analysis using the MaxCor algorithm. Each of the 30 samples were scored against the three expression profiles generated by using all 30 samples.

The scores are plotted on the bar chart (white – endothelial, black – epithelial, hatched – muscle). The order of the primary cells is listed on Figure 7.

Figure 17. Omit-one analysis using the MaxCor algorithm. Each of the 30 samples was scored against the three expression profiles generated by using all but the sample omitted. The scores are plotted on the bar chart (white – endothelial, black – epithelial, hatched – muscle). The order of the primary cells is listed on Figure 7.

Figure 18a-18f. Gene expression profiles of epithelial cell lines derived from keratinocyte epithelium, mammary epithelium, bronchial epithelium, prostate epithelium, renal cortical epithelium, renal proximal tubule epithelium, small airway epithelium, and renal epithelium. The data is sorted from highest relative expression to lowest relative expression for keratinocyte epithelial cells.

DETAILED DESCRIPTION OF THE INVENTION

It is to be understood that this invention is not limited to the particular methodology, protocols, cell lines, animal species or genera, constructs, or reagents described and as such may vary. It is also to be understood that the terminology used herein is for the purpose of describing particular embodiments only, and is not intended to limit the scope of the present invention which will be limited only by the appended claims.

It must be noted that as used herein and in the appended claims, the singular forms “a,” “an,” and “the” include plural reference unless the context clearly dictates otherwise. Thus, for example, reference to “a protein” is a reference to one or more proteins and includes equivalents thereof known to those skilled in the art, and so forth.

Unless defined otherwise, all technical and scientific terms used herein have the same meaning as commonly understood to one of ordinary skill in the art to which this invention belongs. Although any methods, devices, and materials similar or equivalent to those described herein can be used in the practice or testing of the invention, the preferred methods, devices and materials are now described.

All publications and patents mentioned herein are hereby incorporated by reference for the purpose of describing and disclosing, for example, the constructs and methodologies that are described in the publications which might be used in connection with the presently described invention. The publications discussed above and throughout the text are provided solely for their disclosure prior to the filing date of the present application. Nothing herein is

to be construed as an admission that the inventors are not entitled to antedate such disclosure by virtue of prior invention.

DEFINITIONS

5 For convenience, the meaning of certain terms and phrases employed in the specification, examples, and appended claims are provided below. The definitions are not meant to be limiting in nature and serve to provide a clearer understanding of certain aspects of the present invention.

The term “genome” is intended to include the entire DNA complement of an
10 organism, including the nuclear DNA component, chromosomal or extrachromosomal DNA, as well as the cytoplasmic domain (*e.g.*, mitochondrial DNA).

The term “gene” refers to a nucleic acid sequence that comprises control and coding sequences necessary for producing a polypeptide or precursor. The polypeptide may be encoded by a full length coding sequence or by any portion of the coding sequence. The gene
15 may be derived in whole or in part from any source known to the art, including a plant, a fungus, an animal, a bacterial genome or episome, eukaryotic, nuclear or plasmid DNA, cDNA, viral DNA, or chemically synthesized DNA. A gene may contain one or more modifications in either the coding or the untranslated regions that could affect the biological activity or the chemical structure of the expression product, the rate of expression, or the
20 manner of expression control. Such modifications include, but are not limited to, mutations, insertions, deletions, and substitutions of one or more nucleotides. The gene may constitute an uninterrupted coding sequence or it may include one or more introns, bound by the appropriate splice junctions.

The term “gene expression” refers to the process by which a nucleic acid sequence
25 undergoes successful transcription and translation such that detectable levels of the nucleotide sequence are expressed.

The terms “gene expression profile” or “gene expression signature” refer to a group of genes representing a particular cell or tissue type (*e.g.*, neuron, coronary artery endothelium, or disease tissue).

30 The term “nucleic acid” as used herein, refers to a molecule comprised of one or more nucleotides, *i.e.*, ribonucleotides, deoxyribonucleotides, or both. The term includes monomers and polymers of ribonucleotides and deoxyribonucleotides, with the ribonucleotides and/or deoxyribonucleotides being bound together, in the case of the

polymers, via 5' to 3' linkages. The ribonucleotide and deoxyribonucleotide polymers may be single or double-stranded. However, linkages may include any of the linkages known in the art including, for example, nucleic acids comprising 5' to 3' linkages. The nucleotides may be naturally occurring or may be synthetically produced analogs that are capable of
5 forming base-pair relationships with naturally occurring base pairs. Examples of non-naturally occurring bases that are capable of forming base-pairing relationships include, but are not limited to, aza and deaza pyrimidine analogs, aza and deaza purine analogs, and other heterocyclic base analogs, wherein one or more of the carbon and nitrogen atoms of the pyrimidine rings have been substituted by heteroatoms, *e.g.*, oxygen, sulfur, selenium,
10 phosphorus, and the like. Furthermore, the term "nucleic acid sequences" contemplates the complementary sequence and specifically includes any nucleic acid sequence that is substantially homologous to the both the nucleic acid sequence and its complement.

The term "homology", as used herein, refers to a degree of complementarity. There may be partial homology or complete homology (*i.e.*, identity). A partially complementary
15 sequence is one that at least partially inhibits an identical sequence from hybridizing to a target nucleic acid; it is referred to using the functional term "substantially homologous." The inhibition of hybridization of the completely complementary sequence to the target sequence may be examined using a hybridization assay (Southern or northern blot, solution hybridization and the like) under conditions of low stringency. A substantially homologous
20 sequence or probe will compete for and inhibit the binding (*i.e.*, the hybridization) of a completely homologous sequence or probe to the target sequence under conditions of low stringency. This is not to say that conditions of low stringency are such that non-specific binding is permitted; low stringency conditions require that the binding of two sequences to
one another be a specific (*i.e.*, selective) interaction. The absence of non-specific binding
25 may be tested by the use of a second target sequence which lacks even a partial degree of complementarity (*e.g.*, less than about 30% identity); in the absence of non-specific binding, the probe will not hybridize to the second non-complementary target sequence.

The term "oligonucleotide" as used herein refers to a nucleic acid molecule comprising, for example, from about 10 to about 1000 nucleotides. Oligonucleotides for use
30 in the present invention are preferably from about 15 to about 150 nucleotides, more preferably from about 150 to about 1000 in length. The oligonucleotide may be a naturally occurring oligonucleotide or a synthetic oligonucleotide. Oligonucleotides may be prepared by the phosphoramidite method (Beaucage and Carruthers, 22 TETRAHEDRON LETT. 1859-62

(1981)), or by the triester method (Matteucci et al., 103 J. AM. CHEM. SOC. 3185 (1981)), or by other chemical methods known in the art.

The terms “modified oligonucleotide” and “modified polynucleotide” as used herein refer to oligonucleotides or polynucleotides with one or more chemical modifications at the
5 molecular level of the natural molecular structures of all or any of the bases, sugar moieties, internucleoside phosphate linkages, as well as to molecules having added substitutions or a combination of modifications at these sites. The internucleoside phosphate linkages may be phosphodiester, phosphotriester, phosphoramidate, siloxane, carbonate, carboxymethylester, acetamidate, carbamate, thioether, bridged phosphoramidate, bridged methylene

10 phosphonate, phosphorothioate, methylphosphonate, phosphorodithioate, bridged phosphorothioate or sulfone internucleotide linkages, or 3'-3', 5'-3', or 5'-5' linkages, and combinations of such similar linkages. The phosphodiester linkage may be replaced with a substitute linkage, such as phosphorothioate, methylamino, methylphosphonate, phosphoramidate, and guanidine, and the ribose subunit of the nucleic acids may also be
15 substituted (*e.g.*, hexose phosphodiester; peptide nucleic acids). The modifications may be internal (single or repeated) or at the end(s) of the oligonucleotide molecule, and may include additions to the molecule of the internucleoside phosphate linkages, such as deoxyribose and phosphate modifications which cleave or crosslink to the opposite chains or to associated enzymes or other proteins. The terms “modified oligonucleotides” and “modified
20 polynucleotides” also include oligonucleotides or polynucleotides comprising modifications to the sugar moieties (*e.g.*, 3'-substituted ribonucleotides or deoxyribonucleotide monomers), any of which are bound together via 5' to 3' linkages.

“Biomolecular sequence,” as used herein, is a term that refers to all or a portion of a gene or nucleic acid sequence. A biomolecular sequence may also refer to all or a portion of
25 an amino acid sequence.

The terms “array” and “microarray” refer to the type of genes or proteins represented on an array by oligonucleotides or protein-capture agents, and where the type of genes or proteins represented on the array is dependent on the intended purpose of the array (*e.g.*, to monitor expression of human genes or proteins). The oligonucleotides or protein-capture
30 agents on a given array may correspond to the same type, category, or group of genes or proteins. Genes or proteins may be considered to be of the same type if they share some common characteristics such as species of origin (*e.g.*, human, mouse, rat); disease state (*e.g.*, cancer); functions (*e.g.*, protein kinases, tumor suppressors); same biological process (*e.g.*,

apoptosis, signal transduction, cell cycle regulation, proliferation, differentiation). For example, one array type may be a “cancer array” in which each of the array oligonucleotides or protein-capture agents correspond to a gene or protein associated with a cancer. An “epithelial array” may be an array of oligonucleotides or protein-capture agents
5 corresponding to unique epithelial genes or proteins. Similarly, a “cell cycle array” may be an array type in which the oligonucleotides or protein-capture agents correspond to unique genes or proteins associated with the cell cycle.

The term “cell type” refers to a cell from a given source (*e.g.*, a tissue, organ) or a cell in a given state of differentiation, or a cell associated with a given pathology or genetic
10 makeup.

The term “activation” as used herein refers to any alteration of a signaling pathway or biological response including, for example, increases above basal levels, restoration to basal levels from an inhibited state, and stimulation of the pathway above basal levels.

The term “differential expression” refers to both quantitative as well as qualitative
15 differences in the temporal and tissue expression patterns of a gene or a protein. For example, a differentially expressed gene may have its expression activated or completely inactivated in normal versus disease conditions. Such a qualitatively regulated gene may exhibit an expression pattern within a given tissue or cell type that is detectable in either control or disease conditions, but is not detectable in both. Differentially expressed genes
20 may represent “high information density genes,” “profile genes,” or “target genes.”

Similarly, a differentially expressed protein may have its expression activated or completely inactivated in normal versus disease conditions. Such a qualitatively regulated protein may exhibit an expression pattern within a given tissue or cell type that is detectable in either control or disease conditions, but is not detectable in both. Moreover, differentially
25 expressed genes may represent “high information density proteins,” “profile proteins,” or “target proteins.”

The term “detectable” refers to an RNA expression pattern which is detectable via the standard techniques of polymerase chain reaction (PCR), reverse transcriptase-(RT) PCR, differential display, and Northern analyses, which are well known to those of skill in the art.

30 Similarly, protein expression patterns may be “detected” via standard techniques such as Western blots.

The term “high information density” refers to a gene or protein whose expression pattern may be used as a predictor or diagnostic, may be used in methods for identifying

therapeutic compounds, drug or toxicity screening, or identifying cellular signal pathways or co-regulated genes. Identification of high information density genes or proteins is accomplished by assessing the information content of one or more genes or proteins comprising one or more gene or protein expression profiles. Genes or proteins providing the highest amount of information content comprise high information density genes or proteins. High information density genes may also be referred to as “predictor genes.” Similarly, high information density proteins may be referred to as “predictor proteins.”

The term “information content” refers to the value assigned to a particular gene or protein based on quantitative and qualitative expression under selected conditions.

Information content may be derived by measuring one or more parameters of gene or protein expression including, but not limited to, the cell type in which the gene or protein is expressed, the magnitude of response over time, and response to chemical or physical stimuli. Algorithms may be used in assessing the information content provided by particular genes or proteins.

A “target gene” refers to a nucleic acid, often derived from a biological sample, to which an oligonucleotide probe is designed to specifically hybridize. It is either the presence or absence of the target nucleic acid that is to be detected, or the amount of the target nucleic acid that is to be quantified. The target nucleic acid has a sequence that is complementary to the nucleic acid sequence of the corresponding probe directed to the target. The target nucleic acid may also refer to the specific subsequence of a larger nucleic acid to which the probe is directed or to the overall sequence (*e.g.*, gene or mRNA) whose expression level it is desired to detect.

A “target protein” refers to an amino acid or protein, often derived from a biological sample, to which a protein-capture agent specifically hybridizes or binds. It is either the presence or absence of the target protein that is to be detected, or the amount of the target protein that is to be quantified. The target protein has a structure that is recognized by the corresponding protein-capture agent directed to the target. The target protein or amino acid may also refer to the specific substructure of a larger protein to which the protein-capture agent is directed or to the overall structure (*e.g.*, gene or mRNA) whose expression level it is desired to detect.

The term “complementary” refers to the topological compatibility or matching together of the interacting surfaces of a probe molecule and its target. The target and its probe can be described as complementary, and furthermore, the contact surface

characteristics are complementary to each other. Hybridization or base pairing between nucleotides or nucleic acids, such as, for example, between the two strands of a double-stranded DNA molecule or between an oligonucleotide probe and a target are complementary.

5 The term “hybridization” refers to the binding, duplexing, or hybridizing of a nucleic acid molecule to a particular nucleic acid sequence under stringent conditions. Hybridization may also refer to the binding of a protein-capture agent to a target protein under certain conditions, such as normal physiological conditions.

 The term “stringent conditions” refers to conditions under which a probe may
10 hybridize to its target nucleic acid sequence, but to no other sequences. Stringent conditions are sequence-dependent (*e.g.*, longer sequences hybridize specifically at higher temperatures). Generally, stringent conditions are selected to be about 5°C lower than the thermal melting point (T_m) for the specific sequence at a defined ionic strength and pH. The T_m is the temperature (under defined ionic strength, pH, and nucleic acid concentration) at
15 which 50% of the probes complementary to the target sequence hybridize to the target sequence at equilibrium. Typically, stringent conditions will be those in which the salt concentration is at least about 0.01 to about 1.0 M sodium ion concentration (or other salts) at about pH 7.0 to about pH 8.3 and the temperature is at least about 30°C for short probes (*e.g.*, 10 to 50 nucleotides). Stringent conditions may also be achieved with the addition of
20 destabilizing agents such as formamide.

 The term “label” refers to agents that are capable of providing a detectable signal, either directly or through interaction with one or more additional members of a signal
producing system. Labels that are directly detectable and may find use in the present
invention include: fluorescent labels, where the wavelength of light absorbed by the
25 fluorophore may generally range from about 300 to about 900 nm, usually from about 400 to about 800 nm, and where the absorbance maximum may typically occur at a wavelength ranging from about 500 to about 800 nm. Specific fluorophores for use in singly labeled primers include: fluorescein, rhodamine, BODIPY, cyanine dyes and the like. Radioactive isotopes, such as ^{35}S , ^{32}P , ^3H , and the like may also be utilized as labels. Examples of labels
30 that provide a detectable signal through interaction with one or more additional members of a signal producing system include capture moieties that specifically bind to complementary binding pair members, where the complementary binding pair members comprise a directly detectable label moiety, such as a fluorescent moiety as described above. The label should be

such that it does not provide a variable signal, but instead provides a constant and reproducible signal over a given period of time. Capture moieties of interest include ligands (e.g., biotin) where the other member of the signal producing system could be fluorescently labeled streptavidin, and the like. The target molecules may be end-labeled, *i.e.*, the label moiety is present at a region at least proximal to, and preferably at, the 5' terminus of the target.

The term "oligonucleotide probe" refers to a surface-immobilized oligonucleotide that may be recognized by a particular target. Depending on context, the term "oligonucleotide probes" refers both to individual oligonucleotide molecules and to the collection of oligonucleotide molecules immobilized at a discrete location. Generally, the probe is capable of binding to a target nucleic acid of complementary sequence through one or more types of chemical bonds, usually through complementary base pairing via hydrogen bond formation. As used herein, an oligonucleotide probe may include natural (e.g., A, G, C, or T) or modified bases (e.g., 7-deazaguanosine, inosine). In addition, the bases in an oligonucleotide probe may be joined by a linkage other than a phosphodiester bond, so long as it does not interfere with hybridization. Thus, oligonucleotide probes may be peptide nucleic acids in which the constituent bases are joined by peptide bonds rather than phosphodiester linkages.

The term "protecting group" as used herein, refers to any of the groups which are designed to block one reactive site in a molecule while a chemical reaction is carried out at another reactive site. The proper selection of protecting groups for a particular synthesis may be governed by the overall methods employed in the synthesis. For example, in photolithography synthesis, discussed below, the protecting groups are photolabile protecting groups such as NVOC and MeNPOC. In other methods, protecting groups may be removed by chemical methods and include groups such as FMOC, DMT, and others known to those of skill in the art.

The term "support" or "substrate" refers to material having a rigid or semi-rigid surface. Such materials may take the form of plates or slides, small beads, pellets, disks or other convenient forms, although other forms may be used. In some embodiments, at least one surface of the substrate will be substantially flat. In other embodiments, a roughly spherical shape may be preferred. In the microarrays of the present invention, the oligonucleotide probes or protein-capture agents (defined below) may be stably associated with the surface of a rigid support, *i.e.*, the probes maintain their position relative to the rigid support under hybridization and washing conditions. As such, the oligonucleotide probes or

protein-capture agents may be non-covalently or covalently associated with the support surface. Examples of non-covalent association include non-specific adsorption, specific binding through a specific binding pair member covalently attached to the support surface, and entrapment in a support material (*e.g.*, a hydrated or dried separation medium) which presents the oligonucleotide probe or protein-capture agent in a manner sufficient for hybridization to occur. Examples of covalent binding include covalent bonds formed between the oligonucleotide probe or protein-capture agent and a functional group present on the surface of the rigid support (*e.g.*, -OH) where the functional group may be naturally occurring or present as a member of an introduced linking group.

As mentioned above, the microarray may be present on a rigid substrate. By rigid, the support is solid and preferably does not readily bend. As such, the rigid substrates of the microarrays are sufficient to provide physical support and structure to the oligonucleotide probes or protein-capture agents present thereon under the assay conditions in which the microarray is utilized, particularly under high-throughput handling conditions.

The term "spatially directed oligonucleotide synthesis" refers to any method of directing the synthesis of an oligonucleotide to a specific location on a substrate.

The term "background" refers to hybridization signals resulting from non-specific binding, or other interactions, between the labeled target nucleic acids and components of the oligonucleotide microarray (*e.g.*, the oligonucleotide probes, control probes, the array substrate) or between target proteins and the protein-capture agents of a protein microarray. Background signals may also be produced by intrinsic fluorescence of the microarray components themselves. A single background signal may be calculated for the entire array, or a different background signal may be calculated for each target nucleic acid or target

protein. The background may be calculated as the average hybridization signal intensity, or where a different background signal is calculated for each target gene or target protein.

Alternatively, background may be calculated as the average hybridization signal intensity produced by hybridization to probes that are not complementary to any sequence found in the sample (*e.g.*, probes directed to nucleic acids of the opposite sense or to genes not found in the sample such as bacterial genes where the sample is mammalian nucleic acids). The background can also be calculated as the average signal intensity produced by regions of the array which lack any probes or protein-capture agents at all.

The term "cluster" refers to a group of nucleic acid sequences or amino acid sequences related to one another by sequence homology. In one example, clusters are formed

based upon a specified degree of homology and/or overlap (*e.g.*, stringency). "Clustering" may be performed with the nucleic acid or amino acid sequence data. For instance, a sequence thought to be associated with a particular molecular or biological function in one tissue might be compared against another library or database of sequences. This type of search is useful to look for homologous, and presumably functionally related, sequences in other tissues or samples, and may be used to streamline the methods of the present invention in that clustering may be used within one or more of the databases to cluster biomolecular sequences prior to performing methods of the invention. The sequences showing sufficient homology with the representative sequence are considered part of a "cluster." Such "sufficient" homology may vary within the needs of one skilled in the art.

The term "linker" refers to a moiety, molecule, or group of molecules attached to a solid support, and spacing an oligonucleotide or other nucleic acid fragment from the solid support.

The term "bead" refers to solid supports for use with the present invention.

Such beads may have a wide variety of forms, including microparticles, beads, and membranes, slides, plates, micromachined chips, and the like. Likewise, solid supports of the invention may comprise a wide variety of compositions, including glass, plastic, silicon, alkanethiolate-derivatized gold, cellulose, low crosslinked and high crosslinked polystyrene, silica gel, polyamide, and the like. Other materials and shapes may be used, including pellets, disks, capillaries, hollow fibers, needles, solid fibers, cellulose beads, pore-glass beads, silica gels, polystyrene beads optionally crosslinked with divinylbenzene, grafted copoly beads, poly-acrylamide beads, latex beads, dimethylacrylamide beads optionally crosslinked with N,N-bis-acryloyl ethylene diamine, and glass particles coated with a hydrophobic polymer.

The term "biological sample" refers to a sample obtained from an organism (*e.g.*, patient) or from components (*e.g.*, cells) of an organism. The sample may be of any biological tissue or fluid. The sample may be a "clinical sample" which is a sample derived from a patient. Such samples include, but are not limited to, sputum, blood, blood cells (*e.g.*, white cells), amniotic fluid, plasma, semen, bone marrow, and tissue or fine needle biopsy samples, urine, peritoneal fluid, and pleural fluid, or cells therefrom. Biological samples may also include sections of tissues such as frozen sections taken for histological purposes. A biological sample may also be referred to as a "patient sample."

“Proteomics” is the study of or the characterization of either the proteome or some fraction of the proteome. The “proteome” is the total collection of the intracellular proteins of a cell or population of cells and the proteins secreted by the cell or population of cells. This characterization includes measurements of the presence, and usually quantity, of the proteins that have been expressed by a cell. The function, structural characteristics (such as post-translational modification), and location within the cell of the proteins may also be studied. “Functional proteomics” refers to the study of the functional characteristics, activity level, and structural characteristics of the protein expression products of a cell or population of cells.

A “protein” means a polymer of amino acid residues linked together by peptide bonds. The term, as used herein, refers to proteins, polypeptides, and peptides of any size, structure, or function. Typically, however, a protein will be at least six amino acids long. If the protein is a short peptide, it will be at least about 10 amino acid residues long. A protein may be naturally occurring, recombinant, or synthetic, or any combination of these. A protein may also comprise a fragment of a naturally occurring protein or peptide. A protein may be a single molecule or may be a multi-molecular complex. The term protein may also apply to amino acid polymers in which one or more amino acid residues is an artificial chemical analogue of a corresponding naturally occurring amino acid.

A “fragment of a protein,” as used herein, refers to a protein that is a portion of another protein. For example, fragments of proteins may comprise polypeptides obtained by digesting full-length protein isolated from cultured cells. In one embodiment, a protein fragment comprises at least about six amino acids. In another embodiment, the fragment comprises at least about ten amino acids. In yet another embodiment, the protein fragment comprises at least about 16 amino acids.

As used herein, an “expression product” is a biomolecule, such as a protein, which is produced when a gene in an organism is expressed. An expression product may comprise post-translational modifications.

The term “protein expression” refers to the process by which a nucleic acid sequence undergoes successful transcription and translation such that detectable levels of the amino acid sequence or protein are expressed.

The terms “protein expression profile” or “protein expression signature” refer to a group of proteins representing a particular cell or tissue type (*e.g.*, neuron, coronary artery endothelium, or disease tissue).

The term "protein-capture agent," as used herein, refers to a molecule or a multi-molecular complex that can bind a protein to itself. In one embodiment, protein-capture agents bind their binding partners in a substantially specific manner. In one embodiment, protein-capture agents may exhibit a dissociation constant (K_D) of less than about 10^{-6} . The protein-capture agent may comprise a biomolecule such as a protein or a polynucleotide. The biomolecule may further comprise a naturally occurring, recombinant, or synthetic biomolecule. Examples of protein-capture agents include antibodies, antigens, receptors, or other proteins, or portions or fragments thereof. Furthermore, protein-capture agents are understood not to be limited to agents that only interact with their binding partners through noncovalent interactions. Rather, protein-capture agents may also become covalently attached to the proteins with which they bind. For example, the protein-capture agent may be photocrosslinked to its binding partner following binding.

A "region of protein-capture agents" is a term that refers to a discrete area of immobilized protein-capture agents on the surface of a substrate. The regions may be of any geometric shape or may be irregularly shaped.

As used herein, the term "binding partner" refers to a protein that may bind to a particular protein-capture agent. In one embodiment, the binding partner binds a protein-capture agent in a substantially specific manner. In some cases, the protein-capture agent may be a cellular or extracellular protein and the binding partner may be the entity normally bound *in vivo*. In other embodiments, however, the binding partner may be the protein or peptide on which the protein-capture agent was selected (through *in vitro* or *in vivo* selection) or raised (as in the case of antibodies). A binding partner may be shared by more than one protein-capture agent. For example, a binding partner that is bound by a variety of polyclonal antibodies may bear a number of different epitopes. One protein-capture agent may also bind to a multitude of binding partners, for example, if the binding partners share the same epitope.

A "population of cells in an organism" means a collection of more than one cell in a single organism or more than one cell originally derived from a single organism. The cells in the collection are preferably all of the same type. They may all be from the same tissue in an organism, for example. Most preferably, gene expression in all of the cells in the population is identical or nearly identical.

"Conditions suitable for protein binding" means those conditions (in terms of salt concentration, pH, detergent, protein concentration, temperature, etc.) that allow for binding

to occur between an immobilized protein-capture agent and its binding partner in solution. Preferably, the conditions are not so lenient that a significant amount of nonspecific protein binding occurs.

A “small molecule” comprises a compound or molecular complex, either synthetic,
5 naturally derived, or partially synthetic, composed of carbon, hydrogen, oxygen, and nitrogen, which may also contain other elements, and which may have a molecular weight of less than about 5,000, and in a specific embodiment between about 100 and about 1,500.

The term “antibody” means an immunoglobulin, whether natural or partially or wholly synthetically produced. All derivatives thereof that maintain specific binding ability
10 are also included in the term. The term also covers any protein having a binding domain that is homologous or largely homologous to an immunoglobulin binding domain. An antibody may be monoclonal or polyclonal. The antibody may be a member of any immunoglobulin class, including any of the human classes: IgG, IgM, IgA, IgD, and IgE.

The term “antibody fragment” refers to any derivative of an antibody that is less than
15 full-length. In one aspect, the antibody fragment retains at least a significant portion of the full-length antibody's specific binding ability, specifically, as a binding partner. Examples of antibody fragments include, but are not limited to, Fab, Fab', F(ab')₂, scFv, Fv, dsFv diabody, and Fd fragments. The antibody fragment may be produced by any means. For example, the antibody fragment may be enzymatically or chemically produced by fragmentation of an
20 intact antibody or it may be recombinantly produced from a gene encoding the partial antibody sequence. Alternatively, the antibody fragment may be wholly or partially synthetically produced. The antibody fragment may comprise a single chain antibody fragment. In another embodiment, the fragment may comprise multiple chains that are linked together, for example, by disulfide linkages. The fragment may also comprise a
25 multimolecular complex. A functional antibody fragment may typically comprise at least about 50 amino acids and more typically will comprise at least about 200 amino acids.

As used herein, single-chain Fvs (scFvs) refer to recombinant antibody fragments, consisting of the variable light chain (V_L) and variable heavy chain (V_H) covalently connected to one another by a polypeptide linker. Either V_L or V_H may be the NH₂-terminal
30 domain. The polypeptide linker may be of variable length and composition so long as the two variable domains are bridged without serious steric interference. Typically, the linkers are comprised primarily of stretches of glycine and serine residues with some glutamic acid or lysine residues interspersed for solubility.

“Diabodies” refer to dimeric scFvs. The components of diabodies generally have shorter peptide linkers than most scFvs and they show a preference for associating as dimers.

An “Fv” fragment consists of one V_H and one V_L domain held together by noncovalent interactions. The term “dsFv” is used herein to refer to an Fv with an engineered
5 intermolecular disulfide bond to stabilize the V_H-V_L pair.

The term “F(ab')₂” fragment refers to an antibody fragment essentially equivalent to that obtained from immunoglobulins by digestion with an enzyme pepsin at pH 4.0-4.5. The fragment may be recombinantly produced.

A “Fab” fragment is an antibody fragment essentially equivalent to that obtained by
10 reduction of the disulfide bridge or bridges joining the two heavy chain pieces in the F(ab')₂ fragment. The Fab' fragment may be recombinantly produced.

A “Fab” fragment is an antibody fragment essentially equivalent to that obtained by digestion of immunoglobulins with the enzyme papain. The Fab fragment may be recombinantly produced. The heavy chain segment of the Fab fragment is the Fd piece.

15 The term “coating” means a layer that is either naturally or synthetically formed on or applied to the surface of the substrate. For example, the exposure of a substrate, such as silicon, to air results in oxidation of the exposed surface. In the case of a substrate made of silicon, a silicon oxide coating is formed on the surface upon exposure to air. In other instances, the coating is not derived from the substrate and may be placed upon the surface
20 via mechanical, physical, electrical, or chemical means. An example of this type of coating would be a metal coating that is applied to a silicon or polymeric substrate or a silicon nitride coating that is applied to a silicon substrate. Although a coating may be of any thickness, typically the coating has a thickness smaller than that of the substrate.

An “interlayer” or “adhesion layer” refers to an additional coating or layer that is
25 positioned between the first coating and the substrate. Multiple interlayers may be used together. The primary purpose of a typical interlayer is to facilitate adhesion between the first coating and the substrate. One such example is the use of a titanium or chromium interlayer to help adhere a gold coating to a silicon or glass surface. However, other possible functions of an interlayer are also contemplated. For example, some interlayers may perform
30 a role in the detection system of the microarray, such as a semiconductor or metal layer between a nonconductive substrate and a nonconductive coating.

An “organic thinfilm” is a thin layer of organic molecules that has been applied to a substrate or to a coating on a substrate if present. An organic thinfilm may be less than about

20 nm thick. Alternatively, an organic thinfilm may be less than about 10 nm thick. An organic thinfilm may be disordered or ordered. For example, an organic thinfilm can be amorphous (such as a chemisorbed or spin-coated polymer) or highly organized (such as a Langmuir-Blodgett film or self-assembled monolayer). An organic thinfilm may be heterogeneous or homogeneous. In one embodiment, the organic thinfilm is a monolayer. In another embodiment, the organic thinfilm comprises a lipid bilayer. In other embodiments, the organic thinfilm may comprise a combination of more than one form of organic thinfilm. For example, an organic thinfilm may comprise a lipid bilayer on top of a self-assembled monolayer. A hydrogel may also compose an organic thinfilm. The organic thinfilm may have functionalities exposed on its surface that serve to enhance the surface conditions of a substrate or the coating on a substrate in any of a number of ways. For example, exposed functionalities of the organic thinfilm may be useful in the binding or covalent immobilization of the protein-capture agents to the regions of the protein microarray. Alternatively, the organic thinfilm may bear functional groups, such as polyethylene glycol (PEG), which reduce the non-specific binding of molecules to the surface. Other exposed functionalities serve to tether the thinfilm to the surface of the substrate or the coating. Particular functionalities of the organic thinfilm may also be designed to enable certain detection techniques to be used with the surface. Alternatively, the organic thinfilm may serve the purpose of preventing inactivation of a protein-capture agent or the protein binding partner to be bound by a protein-capture agent from occurring upon contact with the surface of a substrate or a coating on the surface of a substrate.

A "monolayer" is a single-molecule thick organic thinfilm. A monolayer may be disordered or ordered. A monolayer may be a polymeric compound, such as a polynionic polymer, a polyionic polymer, or a block-copolymer. For example, the monolayer may comprise a poly amino acid such as polylysine. In another embodiment, the monolayer may be a self-assembled monolayer. One face of the self-assembled monolayer may comprise chemical functionalities on the termini of the organic molecules that are chemisorbed or physisorbed onto the surface of the substrate or, if present, the coating on the substrate. Examples of suitable functionalities of monolayers include the positively charged amino groups of poly-L-lysine for use on negatively charged surfaces and thiols for use on gold surfaces. Generally, the other face of the self-assembled monolayer is exposed and may bear any number of chemical functionalities or end groups.

A “self-assembled monolayer” is a monolayer that is created by the spontaneous assembly of molecules. The self-assembled monolayer may be ordered, disordered, or exhibit short- to long-range order.

An “affinity tag” is a functional moiety capable of directly or indirectly immobilizing a protein-capture agent onto a substrate surface or an exposed functionality of an organic thinfilm covering the substrate surface. In one embodiment, the affinity tag enables the site-specific immobilization and thus enhances orientation of the protein-capture agent onto the organic thinfilm. In some cases, the affinity tag may be a simple chemical functional group. Other possibilities include amino acids, poly amino acids tags, or full-length proteins. Still other possibilities include carbohydrates and nucleic acids. For example, the affinity tag may be a polynucleotide that hybridizes to another polynucleotide serving as a functional group on the organic thinfilm or another polynucleotide serving as an adaptor. The affinity tag may also be a synthetic chemical moiety. If the organic thinfilm of each of the regions of protein-capture agents comprises a lipid bilayer or monolayer, then a membrane anchor is a suitable affinity tag. The affinity tag may be covalently or noncovalently attached to the protein-capture agent. For example, if the affinity tag is covalently attached to the protein-capture agent it may be attached via chemical conjugation or as a fusion protein. The affinity tag may also be attached to the protein-capture agent via a cleavable linkage. Alternatively, the affinity tag may not be directly in contact with the protein-capture agent. Rather, the affinity tag may be separated from the protein-capture agent by an adaptor. The affinity tag may immobilize the protein-capture agent to the organic thinfilm either through noncovalent interactions or through a covalent linkage.

An “adaptor,” for purposes of this invention, is any entity that links an affinity tag to the protein-capture agent. The adaptor may be, but is not limited to, a discrete molecule that is noncovalently attached to both the affinity tag and the protein-capture agent. The adaptor may be covalently attached to the affinity tag or the protein-capture agent or both, via chemical conjugation or as a fusion protein. Full-length proteins, polypeptides, or peptides may be used as adaptors. Other possible adaptors include carbohydrates or nucleic acids.

The term “fusion protein” refers to a protein composed of two or more polypeptides that, although typically not joined in their native state, are joined by their respective amino and carboxyl termini through a peptide linkage to form a single continuous polypeptide. It is understood that the two or more polypeptide components can either be directly joined or indirectly joined through a peptide linker/spacer.

The term "normal physiological conditions" means conditions that are typical inside a living organism or a cell. Although some organs or organisms provide extreme conditions, the intra-organismal and intra-cellular environment normally varies around pH 7 (i.e., from pH 6.5 to pH 7.5), contains water as the predominant solvent, and exists at a temperature above 0°C and below 50°C. The concentration of various salts depends on the organ, organism, cell, or cellular compartment used as a reference.

I. Nucleic Acid Microarrays

Microarray technology provides the opportunity to analyze a large number of nucleic acid sequences. This technology may also be utilized for comparative gene expression analysis, drug discovery, and characterization of molecular interactions. With respect to expression analysis, the expression pattern of a particular gene may be used to characterize the function of that gene. In addition, microarrays may be utilized to analyze both the static expression of a gene (e.g., expression in a specific tissue) as well as, dynamic expression of a particular gene (e.g., expression of one gene relative to the expression of other genes) (Duggan et al., 21 NATURE GENET. 10-14 (1999)).

An advantage of the microarray technology is the use of an impermeable, rigid support as compared to the porous membranes used in the traditional blotting methods (e.g., Northern and Southern analyses). Hybridization buffers do not penetrate the support resulting in greater access to the oligonucleotide probes, enhanced rates of hybridization, and improved reproducibility. In addition, the microarray technology provides better image acquisition and image processing (Southern et al., 21 NATURE GENET. 5-9 (1999)).

For microarray analysis, nucleic acids (e.g., RNA) may be isolated from a biological sample.

Nucleic acid samples include, but are not limited to, mRNA transcripts of the gene or genes, cDNA reverse transcribed from the mRNA, cRNA transcribed from the cDNA, DNA amplified from the genes, RNA transcribed from amplified DNA, and the like.

A. Methods For Producing Nucleic Acid Microarrays

The microarrays may be produced through spatially directed oligonucleotide synthesis. Methods for spatially directed oligonucleotide synthesis include, without limitation, light-directed oligonucleotide synthesis, microlithography, application by ink jet, microchannel deposition to specific locations and sequestration with physical barriers. In general, these methods involve generating active sites, usually by removing protective groups, and coupling to the active site a nucleotide that, itself, optionally has a protected active site if further nucleotide coupling is desired.

A microarray may be configured, for example, by *in situ* synthesis or by direct deposition ("spotting" or "printing") of synthesized oligonucleotide probes onto the support. The oligonucleotide probes are used to detect complementary nucleic acid sequences in a target sample of interest. *In situ* synthesis has several advantages over direct placement such as higher yields, consistency, efficiency, cost, and potential use of combinatorial strategies (Southern et al. (1999)). However, for longer nucleic acid sequences such as PCR products, deposition may be the preferred method. Generation of microarrays by *in situ* synthesis may be accomplished by a number of methods including photochemical deprotection, ink-jet delivery, and flooding channels (Lipshutz et al., 21 NATURE GENET. 20-24 (1999); Blanchard et al., 11 BIOSENSORS AND BIOELECTRONICS, 687-90 (1996); Maskos et al., 21 NUCLEIC ACIDS RES. 4663-69 (1993)).

The present invention relates to the construction of microarrays by the *in situ* synthesis method using solid-phase DNA synthesis and photolithography (Lipshutz et al. (1999)). Linkers with photolabile protecting groups may be covalently or non-covalently attached to a support (*e.g.*, glass). Light is then directed through a photolithographic screen to specific areas on the support resulting in localized photodeprotection and yielding reactive hydroxyl groups in the illuminated regions. A 3'-O-phosphoramidite-activated deoxynucleoside (protected at the 5'-hydroxyl with a photolabile group) is then incubated with the support and coupling occurs at deprotected sites that were exposed to light. Following the optional capping of unreacted active sites and oxidation, the substrate is rinsed and the surface is illuminated through a second screen, to expose additional hydroxyl groups for coupling to the linker. A second 5'-protected, 3'-O-phosphoramidite-activated deoxynucleoside is presented to the support. The selective photodeprotection and coupling cycles are repeated until the desired products are obtained. Photolabile groups may then be removed and the sequence may be capped. Side chain protective groups may also be removed. Because photolithography is used, the process may be miniaturized to generate high-density microarrays of oligonucleotide probes. Thus, thousands to hundreds of thousands of arbitrary oligonucleotide probes may be generated on a single microarray support using this technology.

To produce a microarray by the spotting method, oligonucleotide probes are prepared, generally by PCR, for printing onto the microarray support. As described for the *in situ* technique, the probes may be selected from a number of sources including nucleic acid databases such as GenBank, Unigen, HomoloGene, RefSeq, dbEST, and dbSNP (Wheeler et

al., 29 NUCLEIC ACIDS RES. 11-16 (2001)). In addition, oligonucleotide probes may be randomly selected from cDNA libraries reflecting, for example, a tissue type (*e.g.*, cardiac or neuronal tissue), or a genomic library representing a species of interest (*e.g.*, *Drosophila melanogaster*). If PCR is used to generate the probes, for example, approximately 100-500
5 pg of the purified PCR product (about 0.6-2.4 kb) may be spotted onto the support (Duggan et al., 1999). The spotting (or printing) may be performed by a robotic arrayer (*see, e.g.*, U.S. Patent Nos. 6,150,147; 5,968,740; 5,856,101; 5,474,796; and 5,445,934;).

A number of different microarray configurations and methods for their production are known to those of skill in the art and are disclosed in U.S. Patent Nos.: 6,156,501; 6,077,674;
10 6,022,963; 5,919,523; 5,885,837; 5,874,219; 5,856,101; 5,837,832; 5,770,722; 5,770,456; 5,744,305; 5,700,637; 5,624,711; 5,593,839; 5,571,639; 5,556,752; 5,561,071; 5,554,501; 5,545,531; 5,529,756; 5,527,681; 5,472,672; 5,445,934; 5,436,327; 5,429,807; 5,424,186; 5,412,087; 5,405,783; 5,384,261; 5,242,974; and the disclosures of which are herein incorporated by reference. Patents describing methods of using arrays in various applications
15 include: U.S. Patent Nos. 5,874,219; 5,848,659; 5,661,028; 5,580,732; 5,547,839; 5,525,464; 5,510,270; 5,503,980; 5,492,806; 5,470,710; 5,432,049; 5,324,633; 5,288,644; 5,143,854; and the disclosures of which are incorporated herein by reference.

B. Microarray Supports

A microarray support may comprise a flexible or rigid substrate. A flexible substrate
20 is capable of being bent, folded, or similarly manipulated without breakage. Examples of solid materials that are flexible solid supports with respect to the present invention include membranes, such as nylon and flexible plastic films. The rigid supports of microarrays are sufficient to provide physical support and structure to the associated oligonucleotides under the appropriate assay conditions.

The support may be biological, nonbiological, organic, inorganic, or a combination of
25 any of these, existing as particles, strands, precipitates, gels, sheets, tubing, spheres, containers, capillaries, pads, slices, films, plates, or slides. In addition, the support may have any convenient shape, such as a disc, square, sphere, or circle. In one embodiment, the support is flat but may take on a variety of alternative surface configurations. For example,
30 the support may contain raised or depressed regions on which the synthesis takes place. The support and its surface may form a rigid support on which the reactions described herein may be carried out. The support and its surface may also be chosen to provide appropriate light-absorbing characteristics. For example, the support may be a polymerized Langmuir

Blodgett film, functionalized glass, Si, Ge, GaAs, GaP, SiO₂, SiN₄, modified silicon, or any one of a wide variety of gels or polymers such as (poly)tetrafluoroethylene, (poly)vinylidenedifluoride, polystyrene, polycarbonate, or combinations thereof. The surface of the support may also contain reactive groups, such as carboxyl, amino, hydroxyl, and thiol groups. The surface may be transparent and contain SiOH functional groups, such as found on silica surfaces.

The support may be composed of a number of materials including glass. There are several advantages for utilizing glass supports in constructing a microarray. For example, microarrays prepared using a glass support, generally utilize microscope slides due to the low inherent fluorescence, thus, minimizing background noise. Moreover, hundreds to thousands of oligonucleotide probes may be attached to slide. The glass slides may be coated with polylysine, amino silanes, or amino-reactive silanes that enhance the hydrophobicity of the slide and improve the adherence of the oligonucleotides (Duggan et al. (1999)). Ultraviolet irradiation is used to crosslink the oligonucleotide probes to the glass support. Following irradiation, the support may be treated with succinic anhydride to reduce the positive charge of the amines. For double-stranded oligonucleotides, the support may be subjected to heat (e.g., 95°C) or alkali treatment to generate single-stranded probes. An additional advantage to using glass is its nonporous nature, thus, requiring a minimal volume of hybridization buffer resulting in enhanced binding of target samples to probes.

In another embodiment, the support may be flat glass or single-crystal silicon with surface relief features of less than about 10 angstroms. The surface of the support may be etched using well-known techniques to provide desired surface features. For example, trenches, v-grooves, or mesa structures allow the synthesis regions to be more closely placed within the focus point of impinging light.

The present invention also relates to nucleic acid microarray supports comprising beads. These beads may have a wide variety of shapes and may be composed of numerous materials. Generally, the beads used as supports may have a homogenous size between about 1 and about 100 microns, and may include microparticles made of controlled pore glass (CPG), highly crosslinked polystyrene, acrylic copolymers, cellulose, nylon, dextran, latex, and polyacrolein. *See e.g.*, U.S. Patent. Nos. 6,060,240; 4,678,814; and 4,413,070.

Several factors may be considered when selecting a bead for a support including material, porosity, size, shape, and linking moiety. Other important factors to be considered in selecting the appropriate support include uniformity, efficiency as a synthesis support,

surface area, and optical properties (*e.g.*, autofluorescence). Typically, a population of uniform oligonucleotide or nucleic acid fragment may be employed. However, beads with spatially discrete regions each containing a uniform population of the same oligonucleotide or nucleic acid fragment (and no other), may also be employed. In one embodiment, such regions are spatially discrete so that signals generated by fluorescent emissions at adjacent regions can be resolved by the detection system being employed.

In general, the support beads may be composed of glass (silica), plastic (synthetic organic polymer), or carbohydrate (sugar polymer). A variety of materials and shapes may be used, including beads, pellets, disks, capillaries, cellulose beads, pore-glass beads, silica gels, polystyrene beads optionally crosslinked with divinylbenzene, grafted co-poly beads, polyacrylamide beads, latex beads, dimethylacrylamide beads optionally cross-linked with N,N-1-bis-acryloyl ethylene diamine, and glass particles coated with a hydrophobic polymer (*e.g.*, a material having a rigid or semirigid surface). The beads may also be chemically derivatized so that they support the initial attachment and extension of nucleotides on their surface.

Oligonucleotide probes may be synthesized directly on the bead, or the probes may be separately synthesized and attached to the bead. *See e.g.*, Albretsen et al., 189 ANAL. BIOCHEM. 40-50 (1990); Lund et al., 16 NUCLEIC ACIDS RES. 10861-80 (1988); Ghosh et al., 15 NUCLEIC ACIDS RES. 5353-72 (1987); Wolf et al., 15 NUCLEIC ACIDS RES. 2911-26 (1987). The attachment to the bead may be permanent, or a cleavable linker between the bead and the probe may also be used. The link should not interfere with the probe-target binding during screening. Linking moieties for attaching and synthesizing tags on microparticle surfaces are disclosed in U.S. No. Patent 4,569,774; Beattie et al., 39 CLIN. CHEM. 719-22 (1993); Maskos and Southern, 20 NUCLEIC ACIDS RES. 1679-84 (1992); Damba et al., 18 NUCLEIC ACIDS RES. 3813-21 (1990); and Pon et al., 6 BIOTECHNIQUES 768-75 (1988). Various links may include polyethyleneoxy, saccharide, polyol, esters, amides, saturated or unsaturated alkyl, aryl, and combinations thereof.

If the oligonucleotide probes are chemically synthesized on the bead, the bead-oligo linkage may be stable during the deprotection step of photolithography. During standard phosphoramidite chemical synthesis of oligonucleotides, a succinyl ester linkage may be used to bridge the 3' nucleotide to the resin. This linkage may be readily hydrolyzed by NH_3 prior to and during deprotection of the bases. The finished oligonucleotides may be released from the resin in the process of deprotection. The probes may be linked to the beads by a siloxane

linkage to Si atoms on the surface of glass beads; a phosphodiester linkage to the phosphate of the 3'-terminal nucleotide via nucleophilic attack by a hydroxyl (typically an alcohol) on the bead surface; or a phosphoramidate linkage between the 3'-terminal nucleotide and a primary amine conjugated to the bead surface.

5 Numerous functional groups and reactants may be used to detach the oligonucleotide probes. For example, functional groups present on the bead may include hydroxy, carboxy, iminoaldehyde, amino, thio, active halogen (Cl or Br) or pseudohalogen (*e.g.*, CF_3 , CN), carbonyl, silyl, tosyl, mesylates, brosylates, and triflates. In some instances, the bead may have protected functional groups that may be partially or wholly deprotected.

10 1. Microarray Support Surface

The support of the microarrays may comprise at least one surface on which a pattern of oligonucleotide probes is present, where the surface may be smooth or substantially planar, or have irregularities, such as depressions or elevations. The surface on which the probes are located may be modified with one or more different layers of compounds that serve to
15 modulate the properties of the surface. Such modification layers may generally range in thickness from a monomolecular thickness of about 1 nm, preferably from a monomolecular thickness of about 0.1 nm, and most preferred from a monomolecular thickness of about 0.001 nm. Modification layers include, for example, inorganic and organic layers such as metals, metal oxides, polymers, small organic molecules and the like. Polymeric layers
20 include peptides, proteins, polynucleic acids or mimetics thereof (*e.g.*, peptide nucleic acids), polysaccharides, phospholipids, polyurethanes, polyesters, polycarbonates, polyureas, polyamides, polyethyleneamines, polyarylene sulfides, polysiloxanes, polyimides, and polyacetates. The polymers may be hetero- or homopolymers, and may or may not have separate functional moieties attached.

25 The oligonucleotide probes of a microarray may be arranged on the surface of the support based on size. With respect to the arrangement according to size, the probes may be arranged in a continuous or discontinuous size format. In a continuous size format, each successive position in the microarray, for example, a successive position in a lane of probes, comprises oligonucleotide probes of the same molecular weight. In a discontinuous size
30 format, each position in the pattern (*e.g.*, band in a lane) represents a fraction of target molecules derived from the original source, where the probes in each fraction will have a molecular weight within a determined range.

The probe pattern may take on a variety of configurations as long as each position in the microarray represents a unique size (*e.g.*, molecular weight or range of molecular weights), depending on whether the array has a continuous or discontinuous format. The microarrays may comprise a single lane or a plurality of lanes on the surface of the support.

5 Where a plurality of lanes are present, the number of lanes will usually be at least about 2 but less than about 200 lanes, preferably more than about 5 but less than about 100 lanes, and most preferred more than about 8 but less than about 80 lanes.

Each microarray may contain oligonucleotide probes isolated from the same source (*e.g.*, the same tissue), or contain probes from different sources (*e.g.*, different tissues, 10 different species, disease and normal tissue). As such, probes isolated from the same source may be represented by one or more lanes; whereas probes from different sources may be represented by individual patterns on the microarray where probes from the same source are similarly located. Therefore, the surface of the support may represent a plurality of patterns of oligonucleotide probes derived from different sources (*e.g.*, tissues), where the probes in 15 each lane are arranged according to size, either continuously or discontinuously.

Surfaces of the support are usually, though not always, composed of the same material as the support. Alternatively, the surface may be composed of any of a wide variety of materials, for example, polymers, plastics, resins, polysaccharides, silica or silica-based materials, carbon, metals, inorganic glasses, membranes, or any of the above-listed substrate 20 materials. The surface may contain reactive groups, such as carboxyl, amino, or hydroxyl groups. The surface may be optically transparent and may have surface SiOH functionalities, such as are found on silica surfaces.

2. Attachment of Oligonucleotide Probes

The surface of the support may possess a layer of linker molecules (or spacers). The 25 linker molecules may be of sufficient length to permit oligonucleotide probes on the support to hybridize to nucleic acid molecules and to interact freely with molecules exposed to the support. The linker molecules may be about 6-50 molecules long to provide sufficient exposure. The linker molecules may also be, for example, aryl acetylene, ethylene glycol oligomers containing about 2-10 monomer units, diamines, diacids, amino acids, or 30 combinations thereof.

The linker molecules may be attached to the support via carbon-carbon bonds using, for example, (poly)trifluorochloroethylene surfaces, or preferably, by siloxane bonds (using, for example, glass or silicon oxide surfaces). Siloxane bonds may be formed via reactions of

linker molecules containing trichlorosilyl or trialkoxysilyl groups. The linker molecules may also have a site for attachment of a longer chain portion. For example, groups that are suitable for attachment to a longer chain portion may include amines, hydroxyl, thiol, and carboxyl groups. The surface attaching portions may include aminoalkylsilanes, hydroxyalkylsilanes, bis(2-hydroxyethyl)-aminopropyltriethoxysilane, 2-hydroxyethylaminopropyltriethoxysilane, aminopropyltriethoxysilane, and hydroxypropyltriethoxysilane. The linker molecules may be attached in an ordered array (*e.g.*, as parts of the head groups in a polymerized Langmuir Blodgett film). Alternatively, the linker molecules may be adsorbed to the surface of the support.

The linker may be a length that is at least the length spanned by, for example, two to four nucleotide monomers. The linking group may be an alkylene group (from about 6 to about 24 carbons in length), a polyethyleneglycol group (from about 2 to about 24 monomers in a linear configuration), a polyalcohol group, a polyamine group (*e.g.*, spermine, spermidine, or polymeric derivatives thereof), a polyester group (*e.g.*, poly(ethylacrylate) from 3 to 15 ethyl acrylate monomers in a linear configuration), a polyphosphodiester group, or a polynucleotide (from about 2 to about 12 nucleic acids). For *in situ* synthesis, the linking group may be provided with functional groups that can be suitably protected or activated. The linking group may be covalently attached to the oligonucleotide probes by an ether, ester, carbamate, phosphate ester, or amine linkage. In one embodiment, linkages are phosphate ester linkages, which can be formed in the same manner as the oligonucleotide linkages. For example, hexaethyleneglycol may be protected on one terminus with a photolabile protecting group (*e.g.*, NVOC or MeNPOC) and activated on the other terminus with 2-cyanoethyl-N,N-diisopropylamino-chlorophosphite to form a phosphoramidite. This linking group may then be used for construction of oligonucleotide probes in the same manner as the photolabile-protected, phosphoramidite-activated nucleotides.

Furthermore, the linker molecules and oligonucleotide probes may contain a functional group with a bound protective group. In one embodiment, the protective group is on the distal or terminal end of the linker molecule opposite the support. The protective group may be either a negative protective group (*e.g.*, the protective group renders the linker molecules less reactive with a monomer upon exposure) or a positive protective group (*e.g.*, the protective group renders the linker molecules more reactive with a monomer upon exposure). In the case of negative protective groups, an additional reactivation step may be required, for example, through heating. The protective group on the linker molecules may be

selected from a wide variety of positive light-reactive groups preferably including nitro aromatic compounds, such as o-nitrobenzyl derivatives or benzylsulfonyl. Other protective groups include 6-nitroveratryloxycarbonyl (NVOC), 2-nitrobenzyloxycarbonyl (NBOC) or α,α -dimethyl-dimethoxybenzyloxycarbonyl (DDZ). Photoremovable protective groups are described in, for example, Patchornik, 92 J. AM. CHEM. SOC. 6333 (1970) and Amit et al., 39 J. ORG. CHEM. 192 (1974).

C. Oligonucleotide Probes

A microarray may contain any number of different oligonucleotide probes. The microarray may have from about 2 to about 100 probes, about 100 to about 10,000 probes, or between about 10,000 and about 1,000,000 probes. In addition, the microarray may have a density of more than 100 oligonucleotide probes at known locations per cm^2 , more than 1,000 probes per cm^2 , or more than 10,000 per cm^2 .

To detect gene expression, oligonucleotide probes may be designed and synthesized based on known sequence information. For example, 20- to 30-mer oligonucleotides that may be derived from known cDNA or EST sequences may be selected to monitor expression (Lipshutz et al. (1999)). The oligonucleotide probes may be selected from a number of sources including nucleic acid databases such as GenBank, Unigen, HomoloGene, RefSeq, dbEST, and dbSNP (Wheeler et al., 29 NUCL. ACIDS RES. 11-16 (2001)). Generally, the probe is complementary to the reference sequence, preferably unique to the tissue or cell type (e.g., skeletal muscle, neuronal tissue) of interest, and preferably hybridizes with high affinity and specificity (Lockhart et al., 14 NATURE BIOTECHNOL. 1675-80 (1996)). In addition, the oligonucleotide probe may represent non-overlapping sequences of the reference sequence that improves probe redundancy resulting in a reduction in false positive rate and an increased accuracy in target quantitation (Lipshutz et al. (1999)).

In one embodiment of the present invention, the oligonucleotide probes are relatively unique, for example, at least about 60-80% of the probes may comprise unique oligonucleotides. In another embodiment, modified oligonucleotides from about 80-300 nucleotides in length, or from about 100-200 nucleotides in length, may be used on the microarrays. These are especially useful in place of cDNAs for determining the presence of mRNA in a sample, as the modified oligonucleotides have the advantage of rapid synthesis and purification and analysis before attachment to the substrate surface. In particular, oligonucleotides with 2'-modified sugar groups demonstrate increased binding affinity with

RNA, and these oligonucleotides are particularly advantageous in identifying mRNA in a sample exposed to a microarray.

Generally, the oligonucleotide probes are generated by standard synthesis chemistries such as phosphoramidite chemistry (U.S. Patent Nos. 4,980,460; 4,973,679; 4,725,677; 5 4,458,066; and 4,415,732; Beaucage and Iyer, 48 TETRAHEDRON 2223-2311 (1992)).

Alternative chemistries that create non-natural backbone groups, such as phosphorothionate and phosphoroamidate may also be employed.

Using the "flow channel" method, oligonucleotide probes are synthesized at selected regions on the support by forming flow channels on the surface of the support through
10 which appropriate reagents flow or in which appropriate reagents are placed. For example, if a monomer is to be bound to the support in a selected region, all or part of the surface of the selected region may be activated for binding by flowing appropriate reagents through all or some of the channels, or by washing the entire support with appropriate reagents. After placing a channel block on the surface of the support, a reagent containing the
15 monomer may flow through or may be placed in all or some of the channels. The channels provide fluid contact to the first selected region, thereby binding the monomer on the support directly or indirectly (via a spacer) in the first selected region.

If a second monomer is coupled to a second selected region, some of which may be included among the first selected region, the second selected region may be in fluid contact
20 with second flow channels through translation, rotation, or replacement of the channel block on the surface of the support; through opening or closing a selected valve; or through deposition. The second region may then be activated. Thereafter, the second monomer may then flow through or may be placed in the second flow channels, binding the second monomer to the second selected region. Thus, the resulting oligonucleotides bound to the
25 support are, for example, A, B, and AB. The process is repeated to form a microarray of oligonucleotide probes of desired length at known locations on the support.

Microarrays may have a plurality of modified oligonucleotides or polynucleotides stably associated with the surface of a support, *e.g.*, covalently attached to the surface with or without a linker molecule. Each oligonucleotide on the array comprises a modified
30 oligonucleotide composition of known identity and usually of known sequence. By stable association, the associated modified oligonucleotides maintain their position relative to the support under hybridization and washing conditions.

The oligonucleotides may be non-covalently or covalently associated with the support surface. Examples of non-covalent association include non-specific adsorption, binding based on electrostatic interactions (*e.g.*, ion pair interactions), hydrophobic interactions, hydrogen bonding interactions, and specific binding through a specific binding pair member covalently attached to the support surface. Examples of covalent binding include covalent bonds formed between the oligonucleotides and a functional group present on the surface of the rigid support (*e.g.*, -OH), where the functional group may be naturally occurring or present as a member of an introduced linking group.

II. Protein Microarrays

Although attempts to evaluate gene activity and to decipher biological processes have traditionally focused on genomics, proteomics offers a promising look at the biological functions of a cell. Proteomics involves the qualitative and quantitative measurement of gene activity by detecting and quantitating expression at the protein level, rather than at the messenger RNA level. Proteomics also involves the study of non-genome encoded events including the post-translational modification of proteins, interactions between proteins, and the location of proteins within the cell.

The study of gene expression at the protein level is important because many of the most important cellular processes are regulated by the protein status of the cell, not by the status of gene expression. In addition, the protein content of a cell is highly relevant to drug discovery efforts because many drugs are designed to be active against protein targets.

Current technologies for the analysis of proteomes are based on a variety of protein separation techniques followed by identification of the separated proteins. The most popular method is based on 2D-gel electrophoresis followed by "in-gel" proteolytic digestion and mass spectroscopy. This 2D-gel technique requires large sample sizes, is time consuming, and is currently limited in its ability to reproducibly resolve a significant fraction of the proteins expressed by a human cell. Techniques involving some large-format 2D-gels can produce gels that separate a larger number of proteins than traditional 2D-gel techniques, but reproducibility is still poor and over 95% of the spots cannot be sequenced due to limitations with respect to sensitivity of the available sequencing techniques. The electrophoretic techniques are also plagued by a bias towards proteins of high abundance.

Standard assays for the presence of an analyte in a solution, such as those commonly used for diagnostics, for example, involve the use of an antibody which has been raised against the targeted antigen. Multianalyte assays known in the art involve the use of multiple

antibodies and are directed towards assaying for multiple analytes. However, these multianalyte assays have not been directed towards assaying the total or partial protein content of a cell or cell population. Furthermore, sample sizes required to adapt such standard antibody assay approaches to the analysis of even a fraction of the estimated 100,000 or more different proteins of a human cell and their various modified states are prohibitively large. Automation and/or miniaturization of antibody assays are required if large numbers of proteins are to be assayed simultaneously. Materials, surface coatings, and detection methods used for macroscopic immunoassays and affinity purification are not readily transferable to the formation or fabrication of miniaturized protein arrays.

Miniaturized DNA chip technologies have been developed and are currently being exploited for the screening of gene expression at the mRNA level. *See, e.g.*, U.S. Pat. Nos. 5,744,305; 5,412,087; and 5,445,934. These chips may be used to determine which genes are expressed by different types of cells and in response to different conditions. However, DNA biochip technology is not transferable to protein-binding assays such as antibody assays because the chemistries and materials used for DNA biochips are not readily transferable to use with proteins. Nucleic acids such as DNA withstand temperatures up to 100°C, can be dried and re-hydrated without loss of activity, and can be bound physically or chemically directly to organic adhesion layers supported by materials such as glass while maintaining their activity. In contrast, proteins such as antibodies are preferably kept hydrated and at ambient temperatures are sensitive to the physical and chemical properties of the support materials. Therefore, maintaining protein activity at the liquid-solid interface requires entirely different immobilization strategies than those used for nucleic acids. The proper orientation of the antibody or other protein-capture agent at the interface is desirable to ensure accessibility of their active sites with interacting molecules. With miniaturization of the chip and decreased feature sizes, the ratio of accessible to non-accessible and the ratio of active to inactive antibodies or proteins become increasingly relevant and important.

Thus, there is a need for the ability to assay in parallel a multitude of proteins expressed by a cell or a population of cells in an organism, including up to the total set of proteins expressed by the cell or cells.

A. Microarray Supports

The substrate of the microarray may be either organic or inorganic, biological or non-biological, or any combination of these materials. In addition, the substrate may be transparent or translucent. In one embodiment, the portion of the surface of the substrate

on which the regions of protein-capture agents reside is flat and firm. In another embodiment, the portion of the surface of the substrate on which the regions of protein-capture agents reside is semi-firm. Of course, the protein microarrays of the present invention need not necessarily be flat nor entirely two-dimensional. Indeed, significant topological features may be present on the surface of the substrate surrounding the regions, between the regions or beneath the regions. For example, walls or other barriers may separate the regions of the microarray.

Numerous materials are suitable for use as a substrate in the microarray embodiment of the invention. The substrate of the invention microarray may comprise a material selected from the group consisting of silicon, silica, quartz, glass, controlled pore glass, carbon, alumina, titania, tantalum oxide, germanium, silicon nitride, zeolites, and gallium arsenide. Many metals such as gold, platinum, aluminum, copper, titanium, and their alloys may be useful as substrates of the microarray. Alternatively, many ceramics and polymers may also be used as substrates. Polymers that may be used as substrates include, but are not limited to polystyrene; poly(tetra)fluoroethylene (PTFE); polyvinylidenedifluoride; polycarbonate; polymethylmethacrylate; polyvinylethylene; polyethyleneimine; poly(etherether)ketone; polyoxymethylene (POM); polyvinylphenol; polylactides; polymethacrylimide (PMI); polyalkenesulfone (PAS); polypropylene, polyethylene; polyhydroxyethylmethacrylate (HEMA); polydimethylsiloxane; polyacrylamide; polyimide; and block-copolymers. The substrate on which the regions of protein-capture agents reside may also be a combination of any of the aforementioned substrate materials.

1. Microarray Support Surface

The support surfaces comprises the surface on which each of the protein-capture agents is immobilized. The support surfaces may comprise the substrate surface, an altered substrate surface, a coating applied to or formed on the substrate surface, or an organic thinfilm applied to or formed on the substrate surface or coating surface. Support surfaces comprise materials suitable for immobilization of the protein-capture agents to the microarrays. Suitable support surfaces include membranes, such as nitrocellulose membranes, polyvinylidenedifluoride (PVDF) membranes, and the like. In another embodiment, the support surfaces may comprise a hydrogel such as dextran. Alternatively, the support surfaces may comprise an organic thinfilm including lipids, charged peptides (e.g., polylysine or poly-arginine), or a neutral amino acid (e.g., polyglycine).

The support surfaces may also comprise a compound that has the ability to interact with both the substrate and the protein-capture agent. For example, functionalities enabling interaction with the substrate may include hydrocarbons having functional groups (e.g. --O--, --CONH--, CONHCO--, --NH--, --CO--, --S--, --SO--), which may interact with functional groups on the substrate. Functionalities enabling interaction with the protein-capture agent comprise antibodies, antigens, receptor ligands, compounds comprising binding sites for affinity tags, and the like.

In another embodiment, the support surfaces may include a coating. The coating may be formed on, or applied to, the support surfaces. The substrate may be modified with a coating by using thinfilm technology based, for example, on physical vapor deposition (PVD), plasma-enhanced chemical vapor deposition (PECVD), or thermal processing.

Alternatively, plasma exposure may be used to directly activate or alter the substrate and create a coating. For example, plasma etch procedures can be used to oxidize a polymeric surface (for example, polystyrene or polyethylene to expose polar functionalities such as hydroxyls, carboxylic acids, aldehydes and the like) which then acts as a coating.

Furthermore, the coating may comprise a component to reduce non-specific binding. For example, a polypropylene substrate may be coated with a compound, such as bovine serum albumin, to reduce non-specific binding. Next, a support surfaces comprising dextran functionally linked to a receptor which recognizes M13 epitopes is added to distinct locations on the coating such that phage expressing recombinant proteins will be bound.

In an alternative embodiment, the coating may comprise an antibody. More particularly, antibodies that recognize epitope tags engineered into the recombinant proteins may be employed. Alternatively, recombinant proteins may comprise a poly-histidine affinity tag. In this case, an anti-histidine antibody chemically linked to the substrate provides a support surfaces for immobilization of the protein-capture agents.

In yet another embodiment, the coating may comprise a metal film. The metal film may range from about 50 nm to about 500 nm in thickness. Alternatively, the metal film may range from about 1 nm to about 1 μ m in thickness.

Examples of metal films that may be used as substrate coatings include aluminum, chromium, titanium, tantalum, nickel, stainless steel, zinc, lead, iron, copper, magnesium, manganese, cadmium, tungsten, cobalt, and alloys or oxides thereof. In one embodiment, the metal film is a noble metal film. Noble metals that may be used for a coating include, but are not limited to, gold, platinum, silver, and copper. In another embodiment, the coating

comprises gold or a gold alloy. Electron-beam evaporation may be used to provide a thin coating of gold on the surface of the substrate. Additionally, commercial metal-like substances may be employed such as TALON metal affinity resin and the like.

5 In alternative embodiments, the coating may comprise a composition selected from the group consisting of silicon, silicon oxide, titania, tantalum oxide, silicon nitride, silicon hydride, indium tin oxide, magnesium oxide, alumina, glass, hydroxylated surfaces, and polymers.

It is contemplated that the coatings of the microarrays may require the addition of at least one adhesion layer or interlayer between the coating and the substrate. The adhesion
10 layer may be at least about 6 angstroms thick but may be much thicker. For example, a layer of titanium or chromium may be desirable between a silicon wafer and a gold coating. In an alternative embodiment, an epoxy glue such as Epo-tek 377® or Epo-tek 301-2®, (Epoxy Technology Inc., Billerica, Mass.) may be used to aid adherence of the coating to the substrate. Determinations as to what material should be used for the adhesion layer would be
15 obvious to one skilled in the art once materials are chosen for both the substrate and coating. In other embodiments, additional adhesion mediators or interlayers may be necessary to improve the optical properties of the microarray, for example, waveguides for detection purposes.

In one embodiment of the invention, the surface of the coating is atomically flat.
20 The mean roughness of the surface of the coating may be less than about 5 angstroms for areas of at least about $25 \mu\text{m}^2$. In a specific embodiment, the mean roughness of the surface of the coating is less than about 3 angstroms for areas of at least about $25 \mu\text{m}^2$. In one embodiment, the coating may be a template-stripped surface. See, e.g., Hegner et al., 291 SURFACE SCIENCE 39-46 (1993); Wagner et al., 11 LANGMUIR 3867-3875 (1995).

25 Several different types of coating may be combined on the surface. The coating may cover the whole surface of the substrate or only parts of it. In one embodiment, the coating covers the substrate surface only at the site of the regions of protein-capture agents. Techniques useful for the formation of coated regions on the surface of the substrate are well known to those of ordinary skill in the art. For example, the regions of coatings on the
30 substrate may be fabricated by photolithography, micromolding (WO 96/29629), wet chemical or dry etching, or any combination of these.

a. Organic Thinfilms

In a particular embodiment, the support surfaces comprises an organic thinfilm layer. The organic thinfilm on which each of the regions of protein-capture agents resides forms a layer either on the substrate itself or on a coating covering the substrate. In one embodiment, the organic thinfilm on which the protein-capture agents of the regions are immobilized is less than about 20 nm thick. In another embodiment, the organic thinfilm of each of the regions is less than about 10 nm thick.

A variety of different organic thinfilms are suitable for use in the present invention. For example, a hydrogel composed of a material such as dextran may serve as a suitable organic thinfilm on the regions of the microarray. In another embodiment, the organic thinfilm is a lipid bilayer.

In yet another embodiment, the organic thinfilm of each of the regions of the microarray is a monolayer. A monolayer of polyarginine or polylysine adsorbed on a negatively charged substrate or coating may comprise the organic thinfilm. Another option is a disordered monolayer of tethered polymer chains. In a particular embodiment, the organic thinfilm is a self-assembled monolayer. Specifically, the self-assembled monolayer may comprise molecules of the formula $X-R-Y$, wherein R is a spacer, X is a functional group that binds R to the surface, and Y is a functional group for binding protein-capture agents onto the monolayer. In an alternative embodiment, the self-assembled monolayer is comprised of molecules of the formula $(X)_a R(Y)_b$ where a and b are, independently, integers greater than or equal to 1 and X, R, and Y are as previously defined.

In another embodiment, the organic thinfilm comprises a combination of organic thinfilms such as a combination of a lipid bilayer immobilized on top of a self-assembled monolayer of molecules of the formula $X-R-Y$. As another example, a monolayer of polylysine may be combined with a self-assembled monolayer of molecules of the formula $X-R-Y$. See U.S. Pat. No. 5,629,213.

In all cases, the coating, or the substrate itself if no coating is present, must be compatible with the chemical or physical adsorption of the organic thinfilm on its surface. For example, if the microarray comprises a coating between the substrate and a monolayer of molecules of the formula $X-R-Y$, then it is understood that the coating must be composed of a material for which a suitable functional group X is available. If no such coating is present, then it is understood that the substrate must be composed of a material for which a suitable functional group X is available.

In one embodiment of the invention, the area of the substrate surface, or coating surface, which separates the regions of protein-capture agents are free of organic thinfilm. In an alternative embodiment, the organic thinfilm may extend beyond the area of the substrate surface, or coating surface if present, covered by the regions of protein-capture agents. For example, the entire surface of the microarray may be covered by an organic thinfilm on which the plurality of spatially distinct regions of protein-capture agents reside. An organic thinfilm that covers the entire surface of the microarray may be homogenous or may comprise regions of differing exposed functionalities useful in the immobilization of regions of different protein-capture agents.

In yet another embodiment, the areas of the substrate surface or coating surface between the regions of protein-capture agents are covered by an organic thinfilm, but an organic thinfilm of a different type than that of the regions of protein-capture agents. For example, the surfaces between the regions of protein-capture agents may be coated with an organic thinfilm characterized by low non-specific binding properties for proteins and other analytes.

A variety of techniques may be used to generate regions of organic thinfilm on the surface of the substrate or on the surface of a coating on the substrate. These techniques are well known to those skilled in the art and will vary depending upon the nature of the organic thinfilm, the substrate, and the coating, if present. The techniques will also vary depending on the structure of the underlying substrate and the pattern of any coating present on the substrate. For example, regions of a coating that are highly reactive with an organic thinfilm may have already been produced on the substrate surface. Areas of organic thinfilm may be created by microfluidics printing, microstamping (U.S. Pat. Nos. 5,731,152 and 5,512,131), or microcontact printing (WO 96/29629). Subsequent immobilization of protein-capture agents to the reactive monolayer regions result in two-dimensional arrays of the agents. Inkjet printer heads provide another option for patterning monolayer X-R-Y molecules, or components thereof, or other organic thinfilm components to nanometer or micrometer scale sites on the surface of the substrate or coating. *See, e.g.,* Lemmo et al., 69 ANAL CHEM. 543-551 (1997); U.S. Pat. Nos. 5,843,767 and 5,837,860. In some cases, commercially available arrayers based on capillary dispensing may also be of use in directing components of organic thinfilms to spatially distinct regions of the microarray (OmniGrid® from Genemachines, Inc, San Carlos, CA, and High-Throughput Microarrayer from Intelligent Bio-Instruments, Cambridge, MA). Other methods for the formation of organic thinfilms include *in situ*

growth from the surface, deposition by physisorption, spin-coating, chemisorption, self-assembly, or plasma-initiated polymerization from gas phase.

Diffusion boundaries between the regions of protein-capture agents immobilized on organic thinfilms such as self-assembled monolayers may be integrated as topographic patterns (physical barriers) or surface functionalities with orthogonal wetting behavior (chemical barriers). For example, walls of substrate material may be used to separate some of the regions of protein-capture agents from some of the others or all of the regions from each other. Alternatively, non-bioreactive organic thinfilms, such as monolayers, with different wettability may be used to separate regions of protein-capture agents from one another.

B. Protein-Capture Agents

A protein microarray contemplated by the present invention may contain any number of different proteins, amino acid sequences, nucleic acid sequences, or small molecules. In one embodiment, the microarrays may comprise all or a portion of a gene, including functional derivatives, variants, analogs and portions thereof. The present invention also contemplates microarrays comprising one or more antibodies or functional equivalents thereof that bind proteins, ligands, and/or binding partners.

For example, the proteins expressed by the protein protein-capture agents immobilized on the microarray may be members of the same family. Such families include, but are not limited to, families of growth factor receptors, hormone receptors, neurotransmitter receptors, catecholamine receptors, amino acid derivative receptors, cytokine receptors, extracellular matrix receptors, antibodies, lectins, cytokines, serpins, proteinases, kinases, phosphatases, ras-like GTPases, hydrolases, steroid hormone receptors, transcription factors, DNA binding proteins, zinc finger proteins, leucine-zipper proteins, homeodomain proteins, intracellular signal transduction modulators and effectors, apoptosis-related factors, DNA synthesis factors, DNA repair factors, DNA recombination factors, cell-surface antigens, Hepatitis C virus (HCV) proteases, HIC proteases, viral integrases, and proteins from pathogenic bacteria.

A protein-capture agent on the microarray may be any molecule or complex of molecules that has the ability to bind a protein and immobilize it to the site of the protein-capture agent on the microarray. In one aspect, the protein-capture agent binds its binding partner in a substantially specific manner. For example, the protein-capture agent may be a protein whose natural function in a cell is to specifically bind another protein, such as an

antibody or a receptor. Alternatively, the protein-capture agent may be a partially or wholly synthetic or recombinant protein that specifically binds a protein.

Moreover, the protein-capture agent may be a protein which has been selected *in vitro* from a mutagenized, randomized, or completely random and synthetic library by its binding affinity to a specific protein or peptide target. The selection method used may be a display method such as ribosome display or phage display. Alternatively, the protein-capture agent obtained via *in vitro* selection may be a DNA or RNA aptamer that specifically binds a protein target. See, e.g., Potyrailo et al., 70 ANAL. CHEM. 3419-25 (1998); Cohen, et al., 94 PROC. NATL. ACAD. SCI. USA 14272-7 (1998); Fukuda, et al., 37 NUCLEIC ACIDS SYMP. SER., 237-8 (1997). Alternatively, the *in vitro* selected protein-capture agent may be a polypeptide. Roberts and Szostak, 94 PROC. NATL. ACAD. SCI. USA 12297-302 (1997). In yet another embodiment, the protein-capture agent may be a small molecule that has been selected from a combinatorial chemistry library or is isolated from an organism.

In a particular embodiment, however, the protein-capture agents are proteins.

The protein-capture agents may be antibodies or antibody fragments. Although antibody moieties are exemplified herein, it is understood that the present arrays and methods may be advantageously employed with other protein-capture agents.

The antibodies or antibody fragments of the microarray may be single-chain Fvs, Fab fragments, Fab' fragments, F(ab')₂ fragments, Fv fragments, dsFvs diabodies, Fd fragments, full-length, antigen-specific polyclonal antibodies, or full-length monoclonal antibodies. In a specific embodiment, the protein-capture agents of the microarray are monoclonal antibodies, Fab fragments or single-chain Fvs.

The antibodies or antibody fragments may be monoclonal antibodies, even commercially available antibodies, against known, well-characterized proteins.

Alternatively, the antibody fragments may be derived by selection from a library using the phage display method. If the antibody fragments are derived individually by selection based on binding affinity to known proteins, then the binding partners of the antibody fragments are known. In an alternative embodiment of the invention, the antibody fragments are derived by a phage display method comprising selection based on binding affinity to the (typically, immobilized) proteins of a cellular extract or a biological sample. In this embodiment, some or many of the antibody fragments of the microarray would bind proteins of unknown identity and/or function.

1. Attachment of Protein-Capture Agents

It is necessary, however, to immobilize proteins-capture agents on a solid support in a way that preserves their folded conformations. Methods of arraying functionally active proteins using microfabricated polyacrylamide gel pads to preserve samples and
5 microelectrophoresis to accelerate diffusion have been described. Arenkov et al., 278 ANAL. BIOCHEM. 123-31 (2000).

The method of attachment will vary with the substrate and protein-capture agent selected. For example, in the case of a phage display library, the method of attachment may involve either the direct attachment of the phage as for example, by anti-M13 antibodies, or
10 by attachment via the recombinant protein as for example via antibodies to an epitope-tag incorporated in the recombinant sequence, or by binding of a histidine-tag (his-tag) incorporated in the recombinant sequence to a metal coating on the support surfaces.

In one embodiment, the protein-immobilizing regions of the microarray comprise an affinity tag that enhances immobilization of the protein-capture agent onto the organic
15 thinfilm. The use of an affinity tag on the protein-capture agent of the microarray provides several advantages. An affinity tag can confer enhanced binding or reaction of the protein-capture agent with the functionalities on the organic thinfilm, such as Y if the organic thinfilm is a an X-R-Y monolayer as previously described. This enhancement effect may be either kinetic or thermodynamic. The affinity tag/organic thinfilm combination used in the
20 regions of protein-capture agents residing on the microarray allows for immobilization of the protein-capture agents in a manner that does not require harsh reaction conditions which are adverse to protein stability or function. In most embodiments, the protein-capture agents are immobilized to the organic thinfilm in aqueous, biological buffers.

An affinity tag also offers immobilization on the organic thinfilm that is specific to a
25 designated site or location on the protein-capture agent (site-specific immobilization). For this to occur, attachment of the affinity tag to the protein-capture agent must be site-specific. Site-specific immobilization helps ensure that the protein-binding site of the agent, such as the antigen-binding site of the antibody moiety, remains accessible to ligands in solution. Another advantage of immobilization through affinity tags is that it allows for a common
30 immobilization strategy to be used with multiple, different protein-capture agents.

The affinity tag may be attached directly, either covalently or noncovalently, to the protein-capture agent. In an alternative embodiment, however, the affinity tag is either

covalently or noncovalently attached to an adaptor that is either covalently or noncovalently attached to the protein-capture agent.

In one embodiment, the affinity tag comprises at least one amino acid. The affinity tag may be a polypeptide comprising at least two amino acids which are reactive with the functionalities of the organic thinfilm. Alternatively, the affinity tag may be a single amino acid that is reactive with the organic thinfilm. Examples of possible amino acids that could be reactive with an organic thinfilm include cysteine, lysine, histidine, arginine, tyrosine, aspartic acid, glutamic acid, tryptophan, serine, threonine, and glutamine. A polypeptide or amino acid affinity tag may be expressed as a fusion protein with the protein-capture agent when the protein-capture agent is a protein, such as an antibody or antibody fragment. Amino acid affinity tags provide either a single amino acid or a series of amino acids that may interact with the functionality of the organic thinfilm, such as the Y-functional group of the self-assembled monolayer molecules. Amino acid affinity tags may be readily introduced into recombinant proteins to facilitate oriented immobilization by covalent binding to the Y-functional group of a monolayer or to a functional group on an alternative organic thinfilm.

The affinity tag may comprise a poly-amino acid tag. A poly-amino acid tag is a polypeptide that comprises from about 2 to about 100 residues of a single amino acid, optionally interrupted by residues of other amino acids. For example, the affinity tag may comprise a poly-cysteine, poly-lysine, poly-arginine, or poly-histidine. Amino acid tags may comprise about two to about twenty residues of a single amino acid, such as, for example, histidines, lysines, arginines, cysteines, glutamines, tyrosines, or any combination of these. For example, an amino acid tag of one to twenty amino acids includes at least one to ten cysteines for thioether linkage; or one to ten lysines for amide linkage; or one to ten arginines for coupling to vicinal dicarbonyl groups. One of ordinary skill in the art can readily pair suitable affinity tags with a given functionality on an organic thinfilm.

The position of the amino acid tag may be at an amino-, or carboxy-terminus of the protein-capture agent which is a protein, or anywhere in-between, as long as the protein-binding region of the protein-capture agent, such as the antigen-binding region of an immobilized antibody moiety, remains in a position accessible for protein binding. Affinity tags introduced for protein purification may be located at the C-terminus of the recombinant protein to ensure that only full-length proteins are isolated during protein purification. For example, if intact antibodies are used on the microarrays, then the attachment point of the affinity tag on the antibody may be located at a C-terminus of the effector (Fc) region of the

antibody. If scFvs are used on the arrays, then the attachment point of the affinity tag may also be located at the C-terminus of the molecules.

Affinity tags may also contain one or more unnatural amino acids. Unnatural amino acids may be introduced using suppressor tRNAs that recognize stop codons (i.e., amber)

5 See, e.g., Cload et al., 3 CHEM. BIOL. 1033-1038 (1996); Ellman et al., 202 METHODS ENZYM. 301-336 (1991); and Noren et al., 244 SCIENCE 182-188 (1989). The tRNAs are chemically amino-acylated to contain chemically altered ("unnatural") amino acids for use with specific coupling chemistries (i.e., ketone modifications, photoreactive groups).

In an alternative embodiment, the affinity tag comprises an intact protein, such as, but
10 not limited to, glutathione S-transferase, an antibody, avidin, or streptavidin.

In embodiments where the protein-capture agent is a protein and the affinity tag is a protein, such as a poly-amino acid tag or a single amino acid tag, the affinity tag may be attached to the protein-capture agent by generating a fusion protein. Alternatively, protein synthesis or protein ligation techniques known to those skilled in the art may be used. For
15 example, intein-mediated protein ligation may be used to attach the affinity tag to the protein-capture agent. See, e.g., Mathys, et al., 231 GENE 1-13 (1999); Evans, et al., 7 PROTEIN SCIENCE 2256-2264 (1998).

Other protein conjugation and immobilization techniques known in the art may be adapted for the purpose of attaching affinity tags to the protein-capture agent. For example,
20 the affinity tag may be an organic bioconjugate that is chemically coupled to the protein-capture agent of interest. Biotin or antigens may be chemically cross-linked to the protein. Alternatively, a chemical crosslinker may be used that attaches a simple functional moiety such as a thiol or an amine to the surface of a protein serving as a protein-capture agent on the microarray.

25 In one embodiment of the present invention, the organic thinfilm of each of the regions comprises, at least in part, a lipid monolayer or bilayer, and the affinity tag comprises a membrane anchor.

In an alternative embodiment, no affinity tag is used to immobilize the protein-capture agents onto the organic thinfilm. An amino acid or other moiety (such as a carbohydrate
30 moiety) inherent to the protein-capture agent itself may instead be used to tether the protein-capture agent to the reactive group of the organic thinfilm. In one embodiment, the immobilization is site-specific with respect to the location of the site of immobilization on the protein-capture agent. For example, the sulfhydryl group on the C-terminal region of the

heavy chain portion of a Fab' fragment generated by pepsin digestion of an antibody, followed by selective reduction of the disulfide bond between monovalent Fab' fragments, may be used as the affinity tag. Alternatively, a carbohydrate moiety on the Fc portion of an intact antibody may be oxidized under mild conditions to an aldehyde group suitable for immobilizing the antibody on a monolayer via reaction with a hydrazide-activated Y group on the monolayer. *See e.g.*, U.S. Patent No. 6,329,209; Dammer et al., 70 BIOPHYS J. 2437-2441 (1996).

Because the protein-capture agents of at least some of the different regions on the microarray are different from each other, different solutions, each containing a different protein-capture agent, must be delivered to the individual regions. Solutions of protein-capture agents may be transferred to the appropriate regions via arrayers, which are well-known in the art and even commercially available. For example, microcapillary-based dispensing systems may be used. These dispensing systems may be automated and computer-aided. A description of and building instructions for an example of a microarrayer comprising an automated capillary system can be found on the internet at <http://cmgm.stanford.edu/pbrown/microarray.html> and <http://cmgm.stanford.edu/pbrown/mguide/index.html>. The use of other microprinting techniques for transferring solutions containing the protein-capture agents to the agent-reactive regions is also possible. Ink-jet printer heads may also be used for precise delivery of the protein-capture agents to the agent-reactive regions. Representative, non-limiting disclosures of techniques useful for depositing the protein-capture agents on the appropriate regions of the substrate may be found, for example, in U.S. Patent. Nos. 5,843,767 (ink-jet printing technique, Hamilton 2200 robotic pipetting delivery system); 5,837,860 (ink-jet printing technique, Hamilton 2200 robotic pipetting delivery system); 5,807,522 (capillary dispensing device); and 5,731,152 (stamping apparatus). Other methods of arraying functionally active proteins include attaching proteins to the surfaces of chemically derivatized microscope slides. *See* MacBeath & Schreiber, 289 SCIENCE 1760-63 (2000).

a. Adaptors

Another embodiment of the protein microarrays of the present invention comprises an adaptor that links the affinity tag to the protein-capture agent on the regions of the microarray. The additional spacing of the protein-capture agent from the surface of the substrate (or coating) that is afforded by the use of an adaptor is particularly advantageous if the protein-capture agent is a protein, because proteins are prone to surface inactivation. The

adaptor may afford some additional advantages as well. For example, the adaptor may help facilitate the attachment of the protein-capture agent to the affinity tag. In another embodiment, the adaptor may help facilitate the use of a particular detection technique with the microarray. One of ordinary skill in the art will be able to choose an adaptor which is appropriate for a given affinity tag. For example, if the affinity tag is streptavidin, then the adaptor could be biotin that is chemically conjugated to the protein-capture agent which is to be immobilized.

In one embodiment, the adaptor comprises a protein. In another embodiment, the affinity tag, adaptor, and protein-capture agent together compose a fusion protein. Such a fusion protein may be readily expressed using standard recombinant DNA technology. Protein adaptors are especially useful to increase the solubility of the protein-capture agent of interest and to increase the distance between the surface of the substrate or coating and the protein-capture agent. A protein adaptor can also be very useful in facilitating the preparative steps of protein purification by affinity binding prior to immobilization on the microarray.

Examples of possible adaptor proteins include glutathione-S-transferase (GST), maltose-binding protein, chitin-binding protein, thioredoxin, and green-fluorescent protein (GFP). GFP may also be used for quantification of surface binding. In an embodiment in which the protein-capture agent is an antibody moiety comprising the Fc region, the adaptor may be a polypeptide, such as protein G, protein A, or recombinant protein A/G (a gene fusion product secreted from a non-pathogenic form of *Bacillus* which contains four Fc binding domains from protein A and two from protein G).

2. Preparation of the Protein-capture Agents of the Microarray

The protein-capture agents used on the microarray may be produced by any of the variety of means known to those of ordinary skill in the art. The protein-capture agents may comprise proteins, specifically, antibodies or fragments thereof, ligands, receptor proteins, and small molecules.

In preparation for immobilization to the arrays of the present invention, the antibody moiety, or any other protein-capture agent that is a protein or polypeptide, may be expressed from recombinant DNA either *in vivo* or *in vitro*. The cDNA encoding the antibody or antibody fragment or other protein-capture agent may be cloned into an expression vector (many examples of which are commercially available) and introduced into cells of the appropriate organism for expression. A broad range of host cells and protein-capture agents may be used to produce the antibodies and antibody fragments, or other proteins, which serve

as the protein-capture agents on the microarray. Expression *in vivo* may be accomplished in bacteria (*e.g.*, *Escherichia coli*), plants (*e.g.*, *Nicotiana tabacum*), lower eukaryotes (*e.g.*, *Saccharomyces cerevisiae*, *Saccharomyces pombe*, *Pichia pastoris*), or higher eukaryotes (*e.g.*, baculovirus-infected insect cells, insect cells, mammalian cells). For *in vitro* expression, PCR-amplified DNA sequences may be directly used in coupled *in vitro* transcription/translation systems (*e.g.*, *E. coli* S30 lysates from T7 RNA polymerase expressing, preferably protease-deficient strains; wheat germ lysates; reticulocyte lysates). The choice of organism for optimal expression depends on the extent of post-translational modifications (*i.e.*, glycosylation, lipid-modifications) desired. The choice of protein-capture agent also depends on other issues, such as whether an intact antibody is to be produced or just a fragment of an antibody (and which fragment), because disulfide bond formation will be affected by the choice of a host cell. One of ordinary skill in the art will be able to readily choose which host cell type is most suitable for the protein-capture agent and application desired.

DNA sequences encoding affinity tags and adaptors may be engineered into the expression vectors such that the protein-capture agent genes of interest can be cloned in frame either 5' or 3' of the DNA sequence encoding the affinity tag and adaptor protein. In most aspects, the expressed protein-capture agents may purified by affinity chromatography using commercially available resins.

Production of a plurality of protein-capture agents may involve parallel processing from cloning to protein expression and protein purification. cDNAs encoding the protein-capture agent of interest may be amplified by PCR using cDNA libraries or expressed sequence tag (EST) clones as templates. For *in vivo* expression of the proteins, cDNAs may be cloned into commercial expression vectors and introduced into an appropriate organism for expression. For *in vitro* expression PCR-amplified DNA sequences may be directly used in coupled transcription/translation systems.

E. coli-based protein expression is generally the method of choice for soluble proteins that do not require extensive post-translational modifications for activity. Extracellular or intracellular domains of membrane proteins may be fused to protein adaptors for expression and purification.

The entire approach may be performed using 96-well assay plates. PCR reactions may be carried out under standard conditions. Oligonucleotide primers may contain unique restriction sites for facile cloning into the expression vectors. Alternatively, the TA cloning

system may be used. The expression vectors may further contain the sequences for affinity tags and the protein adaptors. PCR products may be ligated into the expression vectors (under inducible promoters) and introduced into the appropriate competent *E. coli* strain by calcium-dependent transformation (strains include: XL-1 blue, BL21, SG13009 (lon-)).

- 5 Transformed *E. coli* cells are plated and individual colonies transferred into 96-microarray blocks. Cultures are grown to mid-log phase, induced for expression, and cells collected by centrifugation. Cells are resuspended containing lysozyme and the membranes broken by rapid freeze/thaw cycles, or by sonication. Cell debris is removed by centrifugation and the supernatants transferred to 96-tube arrays. The appropriate affinity matrix is added, the
- 10 protein-capture agent of interest is bound and nonspecifically bound proteins are removed by repeated washing and other steps using centrifugation devices. Alternatively, magnetic affinity beads and filtration devices may be used. The proteins are eluted and transferred to a new 96-well microarray. Protein concentrations are determined and an aliquot of each protein-capture agent is spotted onto a nitrocellulose filter and verified by Western analysis
- 15 using an antibody directed against the affinity tag on the protein-capture agent. The purity of each sample is assessed by SDS-PAGE and Silver staining or mass spectrometry. The protein-capture agents are then snap-frozen and stored at -80°C .

- S. cerevisiae* allows for the production of glycosylated protein-capture agents such as antibodies or antibody fragments. For production in *S. cerevisiae*, the approach described
- 20 above for *E. coli* may be used with slight modifications for transformation and cell lysis. Transformation of *S. cerevisiae* may be accomplished by lithium-acetate and cell lysis by lyticase digestion of the cell walls followed by freeze-thaw, sonication or glass-bead
- extraction. Variations of post-translational modifications may be obtained by using different yeast strains (*i.e.*, *S. pombe*, *P. pastoris*).

- 25 One aspect of the baculovirus system is the array of post-translational modifications that can be obtained, although antibodies and other proteins produced in baculovirus contain carbohydrate structures very different from those produced by mammalian cells. The baculovirus-infected insect cell system requires cloning of viruses, obtaining high titer stocks and infection of liquid insect cell suspensions (cells such as SF9, SF21).

- 30 Mammalian cell-based expression requires transfection and cloning of cell lines. Either lymphoid or non-lymphoid cell may be used in the preparation of antibodies and antibody fragments. Soluble proteins such as antibodies are collected from the medium while intracellular or membrane bound proteins require cell lysis (either detergent solubilization or

freeze-thaw). The protein-capture agents may then be purified by a procedure analogous to that described for *E. coli*.

For *in vitro* translation, the system of choice is *E. coli* lysates obtained from protease-deficient and T7 RNA polymerase overexpressing strains. *E. coli* lysates provide efficient
5 protein expression (30-50µg/ml lysate). The entire process may be carried out in 96-well arrays. Antibody genes or other protein-capture agent genes of interest may be amplified by PCR using oligonucleotides that contain the gene-specific sequences containing a T7 RNA polymerase promoter and binding site and a sequence encoding the affinity tag.

Alternatively, an adaptor protein may be fused to the gene of interest by PCR. Amplified
10 DNAs may be directly transcribed and translated in the *E. coli* lysates without prior cloning for fast analysis. The antibody fragments or other proteins may then be isolated by binding to an affinity matrix and processed as described above.

Alternative *in vitro* translation systems that may be used include wheat germ extracts and reticulocyte extracts. *In vitro* synthesis of membrane proteins or post-translationally
15 modified proteins will require reticulocyte lysates in combination with microsomes.

In one embodiment of the invention, the protein-capture agents on the microarray comprise monoclonal antibodies. The production of monoclonal antibodies against specific protein targets is routine using standard hybridoma technology. In fact, numerous monoclonal antibodies are available commercially.

20 As an alternative to obtaining antibodies or antibody fragments by cell fusion or from continuous cell lines, the antibody moieties may be expressed in bacteriophage.

Such antibody phage display technologies are well known to those skilled in the art.

The bacteriophage protein-capture agents allow for the random recombination of heavy- and
light-chain sequences, thereby creating a library of antibody sequences that may be selected
25 against the desired antigen. The protein-capture agent may be based on bacteriophage lambda or on filamentous phage. The bacteriophage protein-capture agent may be used to express Fab fragments, Fv's with an engineered intermolecular disulfide bond to stabilize the V_H-V_L pair (dsFv's), scFvs, or diabody fragments.

The antibody genes of the phage display libraries may be derived from pre-
30 immunized donors. For example, the phage display library could be a display library prepared from the spleens of mice previously immunized with a mixture of proteins, such as a lysate of human T-cells. Immunization may be used to bias the library to contain a greater number of recombinant antibodies reactive towards a specific set of proteins, such as proteins

found in human T-cells. Alternatively, the library antibodies may be derived from native or synthetic libraries. The native libraries may be constructed from spleens of mice that have not been contacted by external antigen. In a synthetic library, portions of the antibody sequence, typically those regions corresponding to the complementarity determining regions (CDR) loops, have been mutagenized or randomized.

III. Target Samples

Biological samples may be isolated from several sources including, but not limited to, a patient or a cell line. Patient samples may include blood, urine, amniotic fluid, plasma, semen, bone marrow, and tissues. Once isolated, total RNA or protein may be extracted using methods well known in the art. For example, target samples may be generated from total RNA by dT-primed reverse transcription producing cDNA (*see e.g.*, SAMBROOK ET AL., MOLECULAR CLONING: A LABORATORY MANUAL, Cold Spring Harbor Press, New York (1989); AUSUBEL ET AL., CURRENT PROTOCOLS IN MOLECULAR BIOLOGY, John Wiley & Sons, Inc. (1995)). The cDNA may then be transcribed to cRNA by *in vitro* transcription resulting in a linear amplification of the RNA. The target samples may be labeled with, for example, a fluorescent dye (*e.g.*, Cy3-dUTP) or biotin. The labeled targets may be hybridized to the microarray. Laser excitation of the target samples produces fluorescence emissions, which are captured by a detector. This information may then be used to generate a quantitative two-dimensional fluorescence image of the hybridized targets.

Gene expression profiles of a particular tissue or cell type may be generated from RNA (*i.e.*, total RNA or mRNA). Reverse transcription with an oligo-dT primer may be used to isolate and generate mRNA from cellular RNA. To maximize the amount of sample or signal, labeled total RNA may also be used. The RNA may be fluorescently labeled or labeled with a radioactive isotope. For radioactive detection, a low energy emitter, such as ³³P-dCTP, is preferred due to close proximity of the oligonucleotide probes on the support. The fluorophores, Cy3-dUTP or Cy5-dUTP, may used for fluorescent labeling. These fluorophores demonstrate efficient incorporation with reverse transcriptase and better yields. Furthermore, these fluorophores possess distinguishable excitation and emission spectra. Thus, two samples, each labeled with a different fluorophore, may be simultaneously hybridized to a microarray.

The nucleic acid sample may be amplified prior to hybridization. Amplification methods include, but are not limited to PCR (INNIS ET AL., PCR PROTOCOLS. A GUIDE TO METHODS AND APPLICATION, Academic Press, Inc. San Diego, (1990)), ligase chain reaction

(LCR) (Barringer et al., 89 GENE 117 (1990); Wu and Wallace, 4 GENOMES 560 (1989); and Landegren et al., 241 SCIENCE 1077 (1988)), transcription amplification (Kwoh, et al., 86 PROC. NATL. ACAD. SCI. USA 1173 (1989)), and self-sustained sequence replication (Guatelli, et al., 87 PROC. NATL. ACAD. SCI. USA 1874 (1990)).

- 5 The target nucleic acids may be labeled at one or more nucleotides during or after amplification. Labels suitable for use with microarray technology include labels detectable by spectroscopic, photochemical, biochemical, immunochemical, electrical, optical, or chemical means. In one embodiment, the detectable label is a luminescent label, such as fluorescent labels, chemiluminescent labels, bioluminescent labels, and colorimetric labels.
- 10 In a specific embodiment, the label is a fluorescent label such as fluorescein, rhodamine, lissamine, phycoerythrin, polymethine dye derivative, phosphor, or Cy2, Cy3, Cy3.5, Cy5, Cy5.5, Cy7. Commercially available fluorescent labels include fluorescein phosphoramidites such as Fluoreprime (Pharmacia, Piscataway, NJ), Fluoredite (Millipore, Bedford, MA), and FAM (ABI, Foster City, CA). Other labels include biotin for staining with labeled
- 15 streptavidin conjugate, magnetic beads (*e.g.*, Dynabeads), fluorescent dyes (*e.g.*, texas red, rhodamine, green fluorescent protein), radiolabels (*e.g.*, ^3H , ^{125}I , ^{35}S , ^{14}C , or ^{32}P), enzymes (*e.g.*, horseradish peroxidase, alkaline phosphatase), and colorimetric labels such as colloidal gold or colored glass or plastic (*e.g.*, polystyrene, polypropylene, latex) beads (*see e.g.*, U.S. Patent Nos. 4,366,241; 4,277,437; 4,275,149; 3,996,345; 3,939,350; 3,850,752; and
- 20 3,817,837).

- The labeled RNA targets are then hybridized to the microarray. A number of buffers may be used for hybridization assays. By way of example, but not limitation, the buffers can be any of the following: 5 M betaine, 1 M NaCl, pH 7.5; 4.5 M betaine, 0.5 M LiCl, pH 8.0; 3 M TMACl, 50 mM Tris-HCl, 1 mM EDTA, 0.1% N-lauroyl-sarkosine (NLS); 2.4 M
- 25 TEACl, 50 mM Tris-HCl, pH 8.0, 0.1% NLS; 1 M LiCl, 10 mM Tris-HCl, pH 8.0, 10% formamide; 2 M GuSCN, 30 mM NaCitrate, pH 7.5; 1 M LiCl, 10 mM Tris-HCl, pH 8.0, 1 mM CTAB; 0.3 mM spermine, 10 mM Tris-HCl, pH 7.5; 2 M NH_4OAc with 2 volumes absolute ethanol. Addition volumes of ionic detergents (such as N-lauroyl-sarkosine) may be added to the buffer. Hybridization may be performed at about 20-65°C (*see e.g.*, U.S. Patent
- 30 No. 6,045,996). Additional examples of hybridization conditions are disclosed in SAMBROOK ET AL., (1989); Berger and Kimmel, GUIDE TO MOLECULAR CLONING TECHNIQUES, METHODS IN ENZYMOLOGY, (1987), Volume 152, Academic Press, Inc., San Diego, Calif.; Young and Davis, 80 PROC. NATL. ACAD. SCI. U.S.A 1194 (1983).

The hybridization buffer may be a formamide-based buffer or an aqueous buffer containing dextran sulfate or polyethylene glycol (*see e.g.*, Cheung et al., 21 NATURE GENET. 15-19 (1999); SAMBROOK ET AL. (1989)). In addition, the hybridization buffer may contain blocking agents such as sheared salmon sperm DNA or Denhardt's reagent to minimize nonspecific binding or background noise. Approximately 50-200 μg labeled total RNA or 2-5 μg labeled mRNA per hybridization is required for a sufficient fluorescent signal and detection. Typically, the amount of oligonucleotide probes attached to the support is in excess of the labeled target RNA.

Following hybridization, the nucleic acids may be analyzed by detecting one or more labels attached to the target nucleic acids. The labels may be incorporated by any of a number of methods well-known in the art. In one embodiment, the label may be simultaneously incorporated during the amplification step in the preparation of the target nucleic acids. For example, a labeled amplification product may be generated by PCR using labeled primers or labeled nucleotides. Transcription amplification using a labeled nucleotide (*e.g.*, fluorescein-labeled UTP or CTP) incorporates a label into the transcribed nucleic acids. Alternatively, a label may be added directly to the original nucleic acid sample or to the amplification product following amplification. Methods for labeling nucleic acids are well-known in the art and include, for example, nick translation or end-labeling.

The hybridized array is then subjected to laser excitation, which produces an emission with a unique spectra. The spectra are scanned, for example, with a scanning confocal laser microscope generating monochrome images of the microarray. These images are digitally processed and normalized based on a threshold value (*e.g.*, background) using mathematical algorithms. For example, a threshold value of 0 may be assigned when no change in the level of fluorescence is observed; an increase in fluorescence may be assigned a value of +1 and a decrease in fluorescence may be assigned a value of -1. Normalization may be based on a designated subgroup of genes where variations in this subgroup are utilized to generate statistics applicable for evaluating the complete gene microarray. Chen et al., 2 J. BIOMED. OPTICS 364-67 (1997).

Use of one of the protein microarrays of the present invention may involve placing the two-dimensional microarray in a flowchamber with approximately 1-10 μl of fluid volume per 25 mm^2 overall surface area. The cover over the microarray in the flowchamber is preferably transparent or translucent. In one embodiment, the cover may comprise Pyrex or quartz glass. In other embodiments, the cover may be part of a detection system that

monitors interaction between the protein-capture agents immobilized on the microarray and protein in a solution such as a cellular extract from a biological sample. The flowchambers should remain filled with appropriate aqueous solutions to preserve protein activity.

Salt, temperature, and other conditions are preferably kept similar to those of normal

5 physiological conditions. Proteins in a fluid solution may be flushed into the flow chamber as desired and their interaction with the immobilized protein-capture agents determined.

Sufficient time must be given to allow for binding between the protein-capture agent and its binding partner to occur. The amount of time required for this will vary depending upon the nature and tightness of the affinity of the protein-capture agent for its binding partner.

10 No specialized microfluidic pumps, valves, or mixing techniques are required for fluid delivery to the microarray.

Alternatively, protein-containing fluid may be delivered to each of the regions of protein-capture agents individually. For example, in one embodiment, the regions of the substrate surface where the protein-capture agents reside may be microfabricated in such a
15 way as to allow integration of the microarray with a number of fluid delivery channels oriented perpendicular to the microarray surface, each one of the delivery channels terminating at the site of an individual protein-capture agent-coated region.

The sample, which is delivered to the microarray, will typically be a fluid. In a one embodiment, the sample is a cellular extract or a biological sample. The sample to be
20 assayed may comprise a complex mixture of proteins, including a multitude of proteins which are not binding partners of the protein-capture agents of the microarray. If the proteins to be analyzed in the sample are membrane proteins, then those proteins will typically need to be solubilized prior to administration of the sample to the microarray. If the proteins to be assayed in the sample are proteins secreted by a population of cells in an organism, the
25 sample may be a biological sample. If the proteins to be assayed in the sample are intracellular, a sample may be a cellular extract. In another embodiment, the microarray may comprise protein-capture agents that bind fragments of the expression products of a cell or population of cells in an organism. In such a case, the proteins in the sample to be assayed may have been prepared by performing a digest of the protein in a cellular extract or a
30 biological sample. In an alternative application, the proteins from only specific fractions of a cell are collected for analysis in the sample.

In general, delivery of solutions containing proteins to be bound by the protein-capture agents of the microarray may be preceded, followed, or accompanied by delivery of a

blocking solution. A blocking solution contains protein or another moiety that will adhere to sites of non-specific binding on the microarray. For example, solutions of bovine serum albumin or milk may be used as blocking solutions.

The binding partners of the plurality of protein-capture agents on the microarray are proteins that are all expression products, or fragments thereof, of a cell or population of cells of a single organism. The expression products may be proteins, including peptides, of any size or function. They may be intracellular proteins or extracellular proteins. The expression products may be from a one-celled or multicellular organism. The organism may be a plant or an animal. In a specific embodiment of the invention, the binding partners are human expression products, or fragments thereof.

In another embodiment of the present invention, the binding partners of the protein-capture agents of the microarray may be a randomly chosen subset of all the proteins, including peptides, which are expressed by a cell or population of cells in a given organism or a subset of all the fragments of those proteins. Thus, the binding partners of the protein-capture agents of the microarray may represent a wide distribution of different proteins from a single organism.

The binding partners of some or all of the protein-capture agents on the microarray need not necessarily be known. Indeed, the binding partner of a protein-capture agent of the microarray may be a protein or peptide of unknown function. For example, the different protein-capture agents of the microarray may together bind a wide range of cellular proteins from a single cell type, many of which are of unknown identity and/or function.

In another embodiment of the present invention, the binding partners of the protein-capture agents on the microarray are related proteins. The different proteins bound by the protein-capture agents may be members of the same protein family. The different binding partners of the protein-capture agents of the microarray may be either functionally related or simply suspected of being functionally related. The different proteins bound by the protein-capture agents of the microarray may also be proteins that share a similarity in structure or sequence or are simply suspected of sharing a similarity in structure or sequence.

For example, the binding partners of the protein-capture agents on the microarray may be growth factor receptors, hormone receptors, neurotransmitter receptors, catecholamine receptors, amino acid derivative receptors, cytokine receptors, extracellular matrix receptors, antibodies, lectins, cytokines, serpins, proteases, kinases, phosphatases, ras-like GTPases, hydrolases, steroid hormone receptors, transcription factors, heat-shock transcription factors,

DNA-binding proteins, zinc-finger proteins, leucine-zipper proteins, homeodomain proteins, intracellular signal transduction modulators and effectors, apoptosis-related factors, DNA synthesis factors, DNA repair factors, DNA recombination factors, cell-surface antigens, hepatitis C virus (HCV) proteases or HIV proteases and may correspond to all or part of the proteins encoded by the genes of the gene expression profiles of the present invention.

IV. Control Oligonucleotides And Protein-Capture Agents

Control oligonucleotides corresponding to genomic DNA, housekeeping genes, or negative and positive control genes may also be present on the microarray. Similarly, protein-capture agents that bind housekeeping proteins, or negative and positive control proteins, such as beta actin protein, may also be present on the microarray. These controls are used to calibrate background or basal levels of expression, and to provide other useful information.

Normalization controls may be oligonucleotide probes that are perfectly complementary to labeled reference oligonucleotides that are added to the nucleic acid sample. Normalization controls may be protein-capture agents that bind specifically and consistently to a labeled reference protein that is added to the protein sample. For example, a protein-capture agent/normalization control pair may comprise avidin/streptavidin or a well-known antibody/antigen combination with a known binding coefficient. The signals obtained from the normalization controls after hybridization provide a control for variations in hybridization conditions, label intensity, efficiency, and other factors that may cause the hybridization signal to vary between microarrays. To normalize fluorescence intensity measurements, for example, signals from all probes of the microarray may be divided by the signal from the control probes.

Expression level controls are probes or protein-capture agents that hybridize/bind specifically with constitutively expressed genes in the biological sample and are designed to control the overall metabolic activity of a cell. Analysis of the variations in the levels of the expression control as compared to the expression level of the target nucleic acid or target protein indicates whether variations in the expression level of a gene or protein is due specifically to changes in the transcription rate of that gene or to general variations in the health of the cell. Thus, if the expression levels of both the expression control and the target gene decrease or increase, these alterations may be attributed to changes in the metabolic activity of the cell as a whole, not to differential expression of the target gene or protein in question. If only the expression of the target gene or protein varies, however, then the

variation in the expression may be attributed to differences in regulation of that gene or protein and not to overall variations in the metabolic activity of the cell. Constitutively expressed genes such as housekeeping genes (*e.g.*, β -actin gene, transferrin receptor gene, GAPDH gene) may serve as expression level controls.

5 Mismatch controls may also be used for expression level controls or for normalization controls. These probes and protein-capture agents provide a control for non-specific binding or cross-hybridization to a nucleic acid in the sample other than the target to which the probe is directed. Mismatch controls are oligonucleotide probes identical to the corresponding test or control probes except for the presence of one or more mismatched bases. One or more
10 mismatches (*e.g.*, substituting guanine, cytidine, or thymine for adenine) are selected such that under appropriate hybridization conditions (*e.g.*, stringent conditions), the test or control probe would be expected to hybridize with its target sequence, but the mismatch probe would not hybridize or would hybridize to a significantly lesser extent. Similarly, an antibody may be used as a mismatch control protein-capture agent. For example, an antibody may be used
15 that has a base pair mismatch in the binding domain that affects binding as compared to the normal antibody.

V. Detection Methods And Analysis Of Hybridization Results

Methods for signal detection of labeled target nucleic acids hybridized to microarray probes are well-known in the art. For example, a radioactive labeled probe may be detected
20 by radiation emission using photographic film or a gamma counter. For fluorescently labeled target nucleic acids, the localization of the label on the probe microarray may be accomplished with fluorescent microscopy. The hybridized microarray is excited with a light source at the excitation wavelength of the particular fluorescent label and the resulting fluorescence is detected. The excitation light source may be a laser appropriate for the
25 excitation of the fluorescent label.

Confocal microscopy may be automated with a computer-controlled stage to automatically scan the entire microarray. Similarly, a microscope may be equipped with a phototransducer (*e.g.*, a photomultiplier) attached to an automated data acquisition system to automatically record the fluorescence signal produced by hybridization to oligonucleotide
30 probes. *See e.g.*, U.S. Patent. No. 5,143,854.

The present invention also relates to methods for evaluating the hybridization results. These methods may vary with the nature of the specific oligonucleotide probes or protein-capture agent used as well as the controls provided. For example, quantification of the

fluorescence intensity for each probe may be accomplished by measuring the probe signal strength at each location (representing a different probe) on the microarray (*e.g.*, detection of the amount of fluorescence intensity produced by a fixed excitation illumination at each location on the array). The fluorescent intensity for each protein-capture agent and binding pair may be accomplished using similar methods. The absolute intensities of the target nucleic acids or proteins hybridized to the microarray may then be compared with the intensities produced by the controls, providing a measure of the relative expression of the nucleic acids or proteins that hybridize to each of the probes or protein-capture agents.

Normalization of the signal derived from the target nucleic acids to the normalization controls may provide a control for variations in hybridization conditions. Typically, normalization may be accomplished by dividing the measured signal from the other probes or protein-capture agents in the array by the average signal produced by the normalization controls. Normalization may also include correction for variations due to sample preparation and amplification. Such normalization may be accomplished by dividing the measured signal by the average signal from the sample preparation/amplification control probes or protein-capture agents. The resulting values may be multiplied by a constant value to scale the results. Other methods for analyzing microarray data are well-known in the art including coupled two-way clustering analysis, clustering algorithms (hierarchical clustering, self-organizing maps), and support vector machines. *See e.g.*, Brown et al., 97 PROC. NATL. ACAD. SCI. USA 262-67 (2000); Getz et al., 97 PROC. NATL. ACAD. SCI. USA 12079-84 (2000); Holter et al., 97 PROC. NATL. ACAD. SCI. USA 8409-14 (2000); Tamayo et al., 96 PROC. NATL. ACAD. SCI. USA 2907-12 (1999); Eisen et al., 95 PROC. NATL. ACAD. SCI. USA 14863-68 (1998); and Ermolaeva et al., 20 NATURE GENET. 19-23 (1998).

Indeed, the methodologies useful in analyzing gene expression profiles and gene expression data are equally applicable in the context of the study of protein expression. In general, for a variety of applications including proteomics and diagnostics, the methods of the present invention involve the delivery of the sample containing the proteins to be analyzed to the microarrays. After the proteins of the sample have been allowed to interact with and become immobilized on the regions comprising protein-capture agents with the appropriate biological specificity, the presence and/or amount of protein bound at each region is then determined. The detection methods, analysis tools, and algorithms described for the nucleic acid microarrays are equally applicable in the context of protein microarrays.

In addition to the methods described above, a wide range of detection methods are available to analyze the results of protein microarray experiments. Detection may be quantitative and/or qualitative. The protein microarray may be interfaced with optical detection methods such as absorption in the visible or infrared range, chemoluminescence, and fluorescence (including lifetime, polarization, fluorescence correlation spectroscopy (FCS), and fluorescence-resonance energy transfer (FRET)). Other modes of detection such as those based on optical waveguides (WO 96/26432 and U.S. Pat. No. 5,677,196), surface plasmon resonance, surface charge sensors, and surface force sensors are compatible with many embodiments of the present invention. Alternatively, technologies such as those based on Brewster Angle microscopy (BAM) (Schaaf et al., 3 LANGMUIR 1131-1135 (1987)) and ellipsometry (U.S. Pat. Nos. 5,141,311 and 5,116,121; Kim, 22 MACROMOLECULES 2682-2685 (1984)) may be utilized. Quartz crystal microbalances and desorption processes provide still other alternative detection means suitable for at least some embodiments of the invention microarray. *See, e.g.*, U.S. Pat. No. 5,719,060. An example of an optical biosensor system compatible both with some arrays of the present invention and a variety of non-label detection principles including surface plasmon resonance, total internal reflection fluorescence (TIRF), Brewster Angle microscopy, optical waveguide lightmode spectroscopy (OWLS), surface charge measurements, and ellipsometry are discussed in U.S. Pat. No. 5,313,264.

Other different types of detection systems suitable to assay the protein expression arrays of the present invention include, but are not limited to, fluorescence, measurement of electronic effects upon exposure to a compound or analyte, luminescence, ultraviolet visible light, and laser induced fluorescence (LIF) detection methods, collision induced dissociation (CID), mass spectroscopy (MS), CCD cameras, electron and three dimensional microscopy. Other techniques are known to those of skill in the art. For example, analyses of combinatorial arrays and biochip formats have been conducted using LIF techniques that are relatively sensitive. *See, e.g.*, Ideue et al., 337 CHEM. PHYSICS LETTERS 79-84 (2000).

One detection system of particular interest is time-of-flight mass spectrometry (TOF-MS). Using parallel sampling techniques, time-of-flight mass spectrometry may be used for the detailed characterization of hundreds of molecules in a sample mixture at each discrete location within the microarray. Time-of-flight mass spectrometry based systems enable extremely rapid analysis (microseconds to milliseconds instead of seconds for scanning MS devices) high levels of selectivity compared to other techniques with good sensitivity (better

than one part per million, as opposed to one part per ten thousand for scanning MS), As a mass spectroscopic technique, time-of-flight mass spectrometry provides molecular weight and structural information for identification of unknown samples.

Additional levels of sensitivity are added by coupling time-of-flight mass spectrometry to another separation system. Thus, in an embodiment, the present invention comprises using ion mobility in combination with time-of-flight mass spectrometry for the analysis of microarrays. The combination of ion mobility and time-of-flight mass spectrometry is referred to as multi-dimensional spectroscopy (MDS). Ions are electro-sprayed into the front of the MDS device. Electrospray is a method for ionizing relatively large molecules and having them form a gas phase. The solution containing the sample is sprayed at high voltage, forming charged droplets. These droplets evaporate, leaving the sample's ionized molecules in the gas phase. These ions continue into the ion mobility chamber where the ions travel under the influence of a uniform electric field through a buffer gas. The principle underlying ion mobility separation techniques is that compact ions undergo fewer collisions than ions having extended shapes and thus, have increased mobility. As the separated components (comprising ions/molecules of different mobility) exit the drift tube, they are pulsed into a time-of-flight mass spectrometer.

Although non-label detection methods are generally preferred, some of the types of detection methods commonly used for traditional immunoassays that require the use of labels may be applied to the arrays of the present invention. These techniques include noncompetitive immunoassays, competitive immunoassays, and dual label, radiometric immunoassays. These techniques are primarily suitable for use with the arrays of protein-capture agents when the number of different protein-capture agents with different specificity is small (less than about 100). In the competitive method, binding-site occupancy is determined indirectly. In this method, the protein-capture agents of the microarray are exposed to a labeled developing agent, which is typically a labeled version of the analyte or an analyte analog. The developing agent competes for the binding sites on the protein-capture agent with the analyte. The fractional occupancy of the protein-capture agents on different regions can be determined by the binding of the developing agent to the protein-capture agents of the individual regions.

In the noncompetitive method, binding site occupancy is determined directly. In this method, the regions of the microarray are exposed to a labeled developing agent capable of binding to either the bound analyte or the occupied binding sites on the protein-capture agent.

For example, the developing agent may be a labeled antibody directed against occupied sites (*i.e.*, a “sandwich assay”). Alternatively, a dual label, radiometric, approach may be taken where the protein-capture agent is labeled with one label and the second, developing agent is labeled with a second label. *See* Ekins, et al., 194 CLINICA CHIMICA ACTA. 91-114, (1990).

- 5 Many different labeling methods may be used in the aforementioned techniques, including radioisotopic, enzymatic, chemiluminescent, and fluorescent methods.

VI. Types Of Microarrays

The microarrays of the present invention may be derived from or representative of a specific organism, or cell type, including human microarrays, cancer microarrays, apoptosis
10 microarrays, oncogene and tumor suppressor microarrays, cell-cell interaction microarrays, cytokine and cytokine receptor microarrays, blood microarrays, cell cycle microarrays, neuroarrays, mouse microarrays, and rat microarrays, or combinations thereof.

In further embodiments, the microarrays may represent diseases including cardiovascular diseases, neurological diseases, immunological diseases, various cancers,
15 infectious diseases, endocrine disorders, and genetic diseases.

Alternatively, the microarrays of the present invention may represent a particular tissue type, such as heart, liver, prostate, lung, nerve, muscle, or connective tissue; preferably coronary artery endothelium, umbilical artery endothelium, umbilical vein endothelium, aortic endothelium, dermal microvascular endothelium, pulmonary artery endothelium,
20 myometrium microvascular endothelium, keratinocyte epithelium, bronchial epithelium, mammary epithelium, prostate epithelium, renal cortical epithelium, renal proximal tubule epithelium, small airway epithelium, renal epithelium, umbilical artery smooth muscle, neonatal dermal fibroblast, pulmonary artery smooth muscle, dermal fibroblast, neural progenitor cells, skeletal muscle, astrocytes, aortic smooth muscle, mesangial cells, coronary
25 artery smooth muscle, bronchial smooth muscle, uterine smooth muscle, lung fibroblast, osteoblasts, prostate stromal cells, or combinations thereof.

The present invention contemplates microarrays comprising a gene expression profile comprising one or more nucleic acid sequences including complementary and homologous sequences, wherein said gene expression profile is generated from a cell type selected from
30 the group comprising coronary artery endothelium, umbilical artery endothelium, umbilical vein endothelium, aortic endothelium, dermal microvascular endothelium, pulmonary artery endothelium, myometrium microvascular endothelium, keratinocyte epithelium, bronchial epithelium, mammary epithelium, prostate epithelium, renal cortical epithelium, renal

proximal tubule epithelium, small airway epithelium, renal epithelium, umbilical artery smooth muscle, neonatal dermal fibroblast, pulmonary artery smooth muscle, dermal fibroblast, neural progenitor cells, skeletal muscle, astrocytes, aortic smooth muscle, mesangial cells, coronary artery smooth muscle, bronchial smooth muscle, uterine smooth muscle, lung fibroblast, osteoblasts, and prostate stromal cells.

The present invention contemplates microarrays comprising one or more protein-capture agents, wherein said protein expression profile is generated from a cell type selected from the group comprising coronary artery endothelium, umbilical artery endothelium, umbilical vein endothelium, aortic endothelium, dermal microvascular endothelium, pulmonary artery endothelium, myometrium microvascular endothelium, keratinocyte epithelium, bronchial epithelium, mammary epithelium, prostate epithelium, renal cortical epithelium, renal proximal tubule epithelium, small airway epithelium, renal epithelium, umbilical artery smooth muscle, neonatal dermal fibroblast, pulmonary artery smooth muscle, dermal fibroblast, neural progenitor cells, skeletal muscle, astrocytes, aortic smooth muscle, mesangial cells, coronary artery smooth muscle, bronchial smooth muscle, uterine smooth muscle, lung fibroblast, osteoblasts, and prostate stromal cells.

In a specific embodiment, the present invention provides a microarray comprising an endothelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 48; SEQ ID NO: 63; SEQ ID NO: 70; SEQ ID NO: 82; SEQ ID NO: 94; and SEQ ID NO: 144.

In another embodiment, a microarray of the present invention may comprise a muscle cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID

NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 54; SEQ ID NO: 55; and SEQ ID NO: 69.

In an alternative embodiment, a microarray comprises a primary cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 43; SEQ ID NO: 44; SEQ ID NO: 45; SEQ ID NO: 46; SEQ ID NO: 47; SEQ ID NO: 48; SEQ ID NO: 49; SEQ ID NO: 50; SEQ ID NO: 51; SEQ ID NO: 52; SEQ ID NO: 53; SEQ ID NO: 54; SEQ ID NO: 55; SEQ ID NO: 56; SEQ ID NO: 57; SEQ ID NO: 58; SEQ ID NO: 59; SEQ ID NO: 60; SEQ ID NO: 61; SEQ ID NO: 62; SEQ ID NO: 63; SEQ ID NO: 64; SEQ ID NO: 65; SEQ ID NO: 66; SEQ ID NO: 67; SEQ ID NO: 68; SEQ ID NO: 69; SEQ ID NO: 70; SEQ ID NO: 71; SEQ ID NO: 72; SEQ ID NO: 73; SEQ ID NO: 74; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ ID NO: 78; SEQ ID NO: 79; SEQ ID NO: 80; SEQ ID NO: 81; SEQ ID NO: 82; SEQ ID NO: 83; SEQ ID NO: 84; SEQ ID NO: 85; SEQ ID NO: 86; SEQ ID NO: 87; SEQ ID NO: 88; SEQ ID NO: 89; SEQ ID NO: 90; SEQ ID NO: 91; SEQ ID NO: 92; SEQ ID NO: 93; SEQ ID NO: 94; SEQ ID NO: 95; SEQ ID NO: 96; SEQ ID NO: 97; SEQ ID NO: 98; SEQ ID NO: 99; SEQ ID NO: 100; SEQ ID NO: 101; SEQ ID NO: 102; SEQ ID NO: 103; SEQ ID NO: 104; SEQ ID NO: 105; SEQ ID NO: 106; SEQ ID NO: 107; SEQ ID NO: 108; SEQ ID NO: 109; SEQ ID NO: 110; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 113; SEQ ID NO: 114; SEQ ID NO: 115; SEQ ID NO: 116; SEQ ID NO: 118; SEQ ID NO: 119; SEQ ID NO: 120; SEQ ID NO: 121; SEQ ID NO: 122; SEQ ID NO: 123; SEQ ID NO: 124; SEQ ID NO: 125; SEQ ID NO: 126; SEQ ID NO: 127; SEQ ID NO: 128; SEQ ID NO: 129; SEQ ID NO: 130; SEQ ID NO: 131; SEQ ID NO: 132; SEQ ID NO: 133; SEQ ID NO: 134; SEQ ID NO: 135; SEQ ID NO: 136; SEQ ID NO: 137; SEQ ID NO: 138; SEQ ID NO: 139; SEQ ID NO: 140; SEQ ID NO: 141; SEQ ID NO: 142; SEQ ID NO: 143; SEQ ID

NO: 144; SEQ ID NO: 145; SEQ ID NO: 146; SEQ ID NO: 147; SEQ ID NO: 148; SEQ ID NO: 149; SEQ ID NO: 150; SEQ ID NO: 151; SEQ ID NO: 152; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186.

The present invention also provides a microarray comprising an epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 47; SEQ ID NO: 60; SEQ ID NO: 67; SEQ ID NO: 73; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ ID NO: 78; SEQ ID NO: 80; SEQ ID NO: 96; SEQ ID NO: 98; SEQ ID NO: 99; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 123; SEQ ID NO: 127; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186.

In yet another embodiment, a microarray may comprise a keratinocyte epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 187; SEQ ID NO: 188; SEQ ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ ID NO: 192; SEQ ID NO: 193; SEQ ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ ID NO: 197; SEQ ID NO: 198; SEQ ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ ID NO: 202; SEQ ID NO: 203; SEQ ID NO: 204; SEQ ID NO: 205; SEQ ID NO:

206; SEQ ID NO: 207; SEQ ID NO: 208; SEQ ID NO: 209; SEQ ID NO: 210; and SEQ ID NO: 211.

The present invention also provides a microarray comprising a mammary epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 78; SEQ ID NO: 212; SEQ ID NO: 213; SEQ ID NO: 216; SEQ ID NO: 225; SEQ ID NO: 226; SEQ ID NO: 227; SEQ ID NO: 239; SEQ ID NO: 271; SEQ ID NO: 285; and SEQ ID NO: 289.

In an alternative embodiment, a microarray may comprise a bronchial epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 27; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 169; SEQ ID NO: 214; SEQ ID NO: 215; SEQ ID NO: 223; SEQ ID NO: 224; SEQ ID NO: 241; SEQ ID NO: 243; SEQ ID NO: 244; SEQ ID NO: 255; SEQ ID NO: 256; SEQ ID NO: 261; and SEQ ID NO: 314.

The present invention also provides a microarray comprising a prostate epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 64; SEQ ID NO: 217; SEQ ID NO: 218; SEQ ID NO: 259; SEQ ID NO: 293; SEQ ID NO: 302; and SEQ ID NO: 320.

In yet another embodiment, a microarray comprises a renal cortical epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 49; SEQ ID NO: 57; SEQ ID NO: 104; SEQ ID NO: 123; SEQ ID NO: 160; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 219; SEQ ID NO: 267; SEQ ID NO: 270; SEQ ID NO: 279; SEQ ID NO: 280; SEQ ID NO: 283; SEQ ID NO: 291; SEQ ID NO: 305; SEQ ID NO: 307; SEQ ID NO: 310; SEQ ID NO: 313; SEQ ID NO: 325; SEQ ID NO: 326; and SEQ ID NO: 327.

The present invention further provides a microarray comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 106; SEQ ID NO: 138; SEQ ID NO: 158; SEQ ID NO: 228; SEQ ID NO: 236; SEQ ID NO: 242; SEQ ID NO: 250; SEQ ID NO: 258; SEQ ID NO: 260; SEQ ID NO: 262; SEQ ID NO: 266; SEQ ID NO: 272; SEQ ID NO: 273; SEQ ID NO: 274; SEQ ID NO: 275; SEQ ID NO: 276; SEQ ID NO: 278; SEQ ID NO: 284; SEQ ID NO: 288; SEQ ID NO: 295; SEQ ID NO: 296; SEQ ID NO: 297; SEQ ID NO: 299; SEQ ID NO: 300; SEQ ID NO: 301; SEQ ID NO: 306; SEQ ID NO: 308; SEQ ID NO: 309; SEQ ID NO: 311; SEQ ID NO: 316; SEQ ID NO: 318; SEQ ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 328; and SEQ ID NO: 329.

In a specific embodiment, a microarray may comprise a small airway epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 183; SEQ ID NO: 220; SEQ ID NO: 221; SEQ ID NO: 222; SEQ ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ ID NO: 232; SEQ ID NO: 233; SEQ ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 237; SEQ ID NO: 238; SEQ ID NO: 240; SEQ ID NO: 245; SEQ ID NO: 246; SEQ ID NO: 247; SEQ ID NO: 248; SEQ ID NO: 249; SEQ ID NO: 251; SEQ ID NO: 252; SEQ ID NO: 254; SEQ ID NO: 257; SEQ ID NO: 263; SEQ ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 268; SEQ ID NO: 269; SEQ ID NO: 270; SEQ ID NO: 277; SEQ ID NO: 281; SEQ ID NO: 282; SEQ ID NO: 286; SEQ ID NO: 287; SEQ ID NO: 290; SEQ ID NO: 294; SEQ ID NO: 298; SEQ ID NO: 303; SEQ ID NO: 312; SEQ ID NO: 315; SEQ ID NO: 317; and SEQ ID NO: 319.

The present invention also provides a microarray comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 37; SEQ ID NO: 253; SEQ ID NO: 304; SEQ ID NO: 323; and SEQ ID NO: 324.

In yet another embodiment, a microarray may comprise one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 27; SEQ ID NO: 37; SEQ ID NO: 49;

SEQ ID NO: 57; SEQ ID NO: 64; SEQ ID NO: 70; SEQ ID NO: 78; SEQ ID NO: 104; SEQ
ID NO: 106; SEQ ID NO: 123; SEQ ID NO: 131; SEQ ID NO: 138; SEQ ID NO: 150; SEQ
ID NO: 158; SEQ ID NO: 160; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 169; SEQ
ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 183; SEQ ID NO: 187; SEQ ID NO: 188; SEQ
5 ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ ID NO: 192; SEQ ID NO: 193; SEQ
ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ ID NO: 197; SEQ ID NO: 198; SEQ
ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ ID NO: 202; SEQ ID NO: 203; SEQ
ID NO: 204; SEQ ID NO: 205; SEQ ID NO: 206; SEQ ID NO: 207; SEQ ID NO: 208; SEQ
ID NO: 209; SEQ ID NO: 210; SEQ ID NO: 211; SEQ ID NO: 212; SEQ ID NO: 213; SEQ
10 ID NO: 214; SEQ ID NO: 215; SEQ ID NO: 216; SEQ ID NO: 217; SEQ ID NO: 218; SEQ
ID NO: 219; SEQ ID NO: 220; SEQ ID NO: 221; SEQ ID NO: 222; SEQ ID NO: 223; SEQ
ID NO: 224; SEQ ID NO: 225; SEQ ID NO: 226; SEQ ID NO: 227; SEQ ID NO: 228; SEQ
ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ ID NO: 232; SEQ ID NO: 233; SEQ
ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 236; SEQ ID NO: 237; SEQ ID NO: 238; SEQ
15 ID NO: 239; SEQ ID NO: 240; SEQ ID NO: 241; SEQ ID NO: 242; SEQ ID NO: 243; SEQ
ID NO: 244; SEQ ID NO: 245; SEQ ID NO: 246; SEQ ID NO: 247; SEQ ID NO: 248; SEQ
ID NO: 249; SEQ ID NO: 250; SEQ ID NO: 251; SEQ ID NO: 252; SEQ ID NO: 253; SEQ
ID NO: 254; SEQ ID NO: 255; SEQ ID NO: 256; SEQ ID NO: 257; SEQ ID NO: 258; SEQ
ID NO: 259; SEQ ID NO: 260; SEQ ID NO: 261; SEQ ID NO: 262; SEQ ID NO: 263; SEQ
20 ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 266; SEQ ID NO: 267; SEQ ID NO: 268; SEQ
ID NO: 269; SEQ ID NO: 270; SEQ ID NO: 271; SEQ ID NO: 272; SEQ ID NO: 273; SEQ
ID NO: 274; SEQ ID NO: 275; SEQ ID NO: 276; SEQ ID NO: 277; SEQ ID NO: 278; SEQ
ID NO: 279; SEQ ID NO: 280; SEQ ID NO: 281; ~~SEQ ID NO: 282~~; SEQ ID NO: 283; SEQ
ID NO: 284; SEQ ID NO: 285; SEQ ID NO: 286; SEQ ID NO: 287; SEQ ID NO: 288; SEQ
25 ID NO: 289; SEQ ID NO: 290; SEQ ID NO: 291; SEQ ID NO: 293; SEQ ID NO: 294; SEQ
ID NO: 295; SEQ ID NO: 296; SEQ ID NO: 297; SEQ ID NO: 298; SEQ ID NO: 299; SEQ
ID NO: 300; SEQ ID NO: 301; SEQ ID NO: 302; SEQ ID NO: 303; SEQ ID NO: 304; SEQ
ID NO: 305; SEQ ID NO: 306; SEQ ID NO: 307; SEQ ID NO: 308; SEQ ID NO: 309; SEQ
ID NO: 310; SEQ ID NO: 311; SEQ ID NO: 312; SEQ ID NO: 313; SEQ ID NO: 314; SEQ
30 ID NO: 315; SEQ ID NO: 316; SEQ ID NO: 317; SEQ ID NO: 318; SEQ ID NO: 320; SEQ
ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 323; SEQ ID NO: 324; SEQ ID NO: 325; SEQ
ID NO: 326; SEQ ID NO: 327; SEQ ID NO: 328; and SEQ ID NO: 329.

In a specific embodiment, the present invention provides a microarray comprising one or more protein-capture agents that bind one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 48; SEQ ID NO: 63; SEQ ID NO: 70; SEQ ID NO: 82; SEQ ID NO: 94; and SEQ ID NO: 144.

In another embodiment, a microarray may comprise one or more protein-capture agents that bind one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 54; SEQ ID NO: 55; and SEQ ID NO: 69.

In an alternative embodiment, a microarray comprises one or more protein-capture agents that bind one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 43; SEQ ID NO: 44; SEQ ID NO: 45; SEQ ID NO: 46; SEQ ID NO: 47; SEQ ID NO: 48; SEQ ID NO: 49; SEQ ID NO: 50; SEQ ID NO: 51; SEQ ID NO: 52; SEQ ID NO: 53; SEQ ID NO: 54; SEQ ID NO: 55; SEQ ID NO: 56; SEQ ID NO: 57; SEQ ID NO: 58; SEQ ID NO: 59; SEQ ID NO: 60; SEQ ID NO: 61; SEQ ID NO: 62; SEQ ID NO: 63; SEQ ID NO: 64; SEQ ID NO: 65; SEQ ID NO: 66; SEQ ID NO: 67; SEQ ID NO: 68; SEQ ID NO: 69; SEQ ID NO: 70; SEQ ID NO: 71; SEQ ID NO: 72; SEQ ID NO: 73; SEQ ID NO: 74; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ

ID NO: 78; SEQ ID NO: 79; SEQ ID NO: 80; SEQ ID NO: 81; SEQ ID NO: 82; SEQ ID
 NO: 83; SEQ ID NO: 84; SEQ ID NO: 85; SEQ ID NO: 86; SEQ ID NO: 87; SEQ ID NO:
 88; SEQ ID NO: 89; SEQ ID NO: 90; SEQ ID NO: 91; SEQ ID NO: 92; SEQ ID NO: 93;
 SEQ ID NO: 94; SEQ ID NO: 95; SEQ ID NO: 96; SEQ ID NO: 97; SEQ ID NO: 98; SEQ
 5 ID NO: 99; SEQ ID NO: 100; SEQ ID NO: 101; SEQ ID NO: 102; SEQ ID NO: 103; SEQ
 ID NO: 104; SEQ ID NO: 105; SEQ ID NO: 106; SEQ ID NO: 107; SEQ ID NO: 108; SEQ
 ID NO: 109; SEQ ID NO: 110; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 113; SEQ
 ID NO: 114; SEQ ID NO: 115; SEQ ID NO: 116; SEQ ID NO: 118; SEQ ID NO: 119; SEQ
 ID NO: 120; SEQ ID NO: 121; SEQ ID NO: 122; SEQ ID NO: 123; SEQ ID NO: 124; SEQ
 10 ID NO: 125; SEQ ID NO: 126; SEQ ID NO: 127; SEQ ID NO: 128; SEQ ID NO: 129; SEQ
 ID NO: 130; SEQ ID NO: 131; SEQ ID NO: 132; SEQ ID NO: 133; SEQ ID NO: 134; SEQ
 ID NO: 135; SEQ ID NO: 136; SEQ ID NO: 137; SEQ ID NO: 138; SEQ ID NO: 139; SEQ
 ID NO: 140; SEQ ID NO: 141; SEQ ID NO: 142; SEQ ID NO: 143; SEQ ID NO: 144; SEQ
 ID NO: 145; SEQ ID NO: 146; SEQ ID NO: 147; SEQ ID NO: 148; SEQ ID NO: 149; SEQ
 15 ID NO: 150; SEQ ID NO: 151; SEQ ID NO: 152; SEQ ID NO: 153; SEQ ID NO: 154; SEQ
 ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ
 ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ
 ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ
 ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ
 20 ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ
 ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ
 ID NO: 185; and SEQ ID NO: 186.

The present invention also provides a microarray comprising one or more protein-
 capture agents that bind one or more amino acid sequences encoded by all or a portion of one
 25 or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 47; SEQ
 ID NO: 60; SEQ ID NO: 67; SEQ ID NO: 73; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO:
 77; SEQ ID NO: 78; SEQ ID NO: 80; SEQ ID NO: 96; SEQ ID NO: 98; SEQ ID NO: 99;
 SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 123; SEQ ID NO: 127; SEQ ID NO: 131;
 SEQ ID NO: 150; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156;
 30 SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161;
 SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166;
 SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171;
 SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176;

SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186.

In yet another embodiment, a microarray may comprise one or more protein-capture agents that bind one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 187; SEQ ID NO: 188; SEQ ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ ID NO: 192; SEQ ID NO: 193; SEQ ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ ID NO: 197; SEQ ID NO: 198; SEQ ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ ID NO: 202; SEQ ID NO: 203; SEQ ID NO: 204; SEQ ID NO: 205; SEQ ID NO: 206; SEQ ID NO: 207; SEQ ID NO: 208; SEQ ID NO: 209; SEQ ID NO: 210; and SEQ ID NO: 211.

The present invention also provides a microarray comprising one or more protein-capture agents that bind one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 78; SEQ ID NO: 212; SEQ ID NO: 213; SEQ ID NO: 216; SEQ ID NO: 225; SEQ ID NO: 226; SEQ ID NO: 227; SEQ ID NO: 239; SEQ ID NO: 271; SEQ ID NO: 285; and SEQ ID NO: 289.

In an alternative embodiment, a microarray may comprise one or more protein-capture agents that bind one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 27; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 169; SEQ ID NO: 214; SEQ ID NO: 215; SEQ ID NO: 223; SEQ ID NO: 224; SEQ ID NO: 241; SEQ ID NO: 243; SEQ ID NO: 244; SEQ ID NO: 255; SEQ ID NO: 256; SEQ ID NO: 261; and SEQ ID NO: 314.

The present invention also provides a microarray comprising one or more protein-capture agents that bind one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 64; SEQ ID NO: 217; SEQ ID NO: 218; SEQ ID NO: 259; SEQ ID NO: 293; SEQ ID NO: 302; and SEQ ID NO: 320.

In yet another embodiment, a microarray comprises one or more protein-capture agents that bind one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 49; SEQ ID NO: 57; SEQ ID NO: 104; SEQ ID NO: 123; SEQ ID NO: 160; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 219; SEQ ID NO: 267; SEQ ID NO: 270; SEQ ID NO: 279; SEQ ID NO:

280; SEQ ID NO: 283; SEQ ID NO: 291; SEQ ID NO: 305; SEQ ID NO: 307; SEQ ID NO: 310; SEQ ID NO: 313; SEQ ID NO: 325; SEQ ID NO: 326; and SEQ ID NO: 327.

The present invention further provides a microarray comprising one or more protein-capture agents that bind one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 106; SEQ ID NO: 138; SEQ ID NO: 158; SEQ ID NO: 228; SEQ ID NO: 236; SEQ ID NO: 242; SEQ ID NO: 250; SEQ ID NO: 258; SEQ ID NO: 260; SEQ ID NO: 262; SEQ ID NO: 266; SEQ ID NO: 272; SEQ ID NO: 273; SEQ ID NO: 274; SEQ ID NO: 275; SEQ ID NO: 276; SEQ ID NO: 278; SEQ ID NO: 284; SEQ ID NO: 288; SEQ ID NO: 295; SEQ ID NO: 296; SEQ ID NO: 297; SEQ ID NO: 299; SEQ ID NO: 300; SEQ ID NO: 301; SEQ ID NO: 306; SEQ ID NO: 308; SEQ ID NO: 309; SEQ ID NO: 311; SEQ ID NO: 316; SEQ ID NO: 318; SEQ ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 328; and SEQ ID NO: 329.

In a specific embodiment, a microarray may comprise one or more protein-capture agents that bind one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 183; SEQ ID NO: 220; SEQ ID NO: 221; SEQ ID NO: 222; SEQ ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ ID NO: 232; SEQ ID NO: 233; SEQ ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 237; SEQ ID NO: 238; SEQ ID NO: 240; SEQ ID NO: 245; SEQ ID NO: 246; SEQ ID NO: 247; SEQ ID NO: 248; SEQ ID NO: 249; SEQ ID NO: 251; SEQ ID NO: 252; SEQ ID NO: 254; SEQ ID NO: 257; SEQ ID NO: 263; SEQ ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 268; SEQ ID NO: 269; SEQ ID NO: 270; SEQ ID NO: 277; SEQ ID NO: 281; SEQ ID NO: 282; SEQ ID NO: 286; SEQ ID NO: 287; SEQ ID NO: 290; SEQ ID NO: 294; SEQ ID NO: 298; SEQ ID NO: 303; SEQ ID NO: 312; SEQ ID NO: 315; SEQ ID NO: 317; and SEQ ID NO: 319.

The present invention also provides a microarray comprising one or more protein-capture agents that bind one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 37; SEQ ID NO: 253; SEQ ID NO: 304; SEQ ID NO: 323; and SEQ ID NO: 324.

In yet another embodiment, a microarray may comprise one or more protein-capture agents that substantially bind one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 27; SEQ ID NO: 37; SEQ ID NO: 49; SEQ ID NO: 57; SEQ ID NO: 64; SEQ ID NO: 70; SEQ ID NO: 78; SEQ ID NO: 104; SEQ ID NO: 106; SEQ ID NO: 123; SEQ ID NO: 131; SEQ

ID NO: 138; SEQ ID NO: 150; SEQ ID NO: 158; SEQ ID NO: 160; SEQ ID NO: 165; SEQ
ID NO: 166; SEQ ID NO: 169; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 183; SEQ
ID NO: 187; SEQ ID NO: 188; SEQ ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ
ID NO: 192; SEQ ID NO: 193; SEQ ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ
5 ID NO: 197; SEQ ID NO: 198; SEQ ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ
ID NO: 202; SEQ ID NO: 203; SEQ ID NO: 204; SEQ ID NO: 205; SEQ ID NO: 206; SEQ
ID NO: 207; SEQ ID NO: 208; SEQ ID NO: 209; SEQ ID NO: 210; SEQ ID NO: 211; SEQ
ID NO: 212; SEQ ID NO: 213; SEQ ID NO: 214; SEQ ID NO: 215; SEQ ID NO: 216; SEQ
ID NO: 217; SEQ ID NO: 218; SEQ ID NO: 219; SEQ ID NO: 220; SEQ ID NO: 221; SEQ
10 ID NO: 222; SEQ ID NO: 223; SEQ ID NO: 224; SEQ ID NO: 225; SEQ ID NO: 226; SEQ
ID NO: 227; SEQ ID NO: 228; SEQ ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ
ID NO: 232; SEQ ID NO: 233; SEQ ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 236; SEQ
ID NO: 237; SEQ ID NO: 238; SEQ ID NO: 239; SEQ ID NO: 240; SEQ ID NO: 241; SEQ
ID NO: 242; SEQ ID NO: 243; SEQ ID NO: 244; SEQ ID NO: 245; SEQ ID NO: 246; SEQ
15 ID NO: 247; SEQ ID NO: 248; SEQ ID NO: 249; SEQ ID NO: 250; SEQ ID NO: 251; SEQ
ID NO: 252; SEQ ID NO: 253; SEQ ID NO: 254; SEQ ID NO: 255; SEQ ID NO: 256; SEQ
ID NO: 257; SEQ ID NO: 258; SEQ ID NO: 259; SEQ ID NO: 260; SEQ ID NO: 261; SEQ
ID NO: 262; SEQ ID NO: 263; SEQ ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 266; SEQ
ID NO: 267; SEQ ID NO: 268; SEQ ID NO: 269; SEQ ID NO: 270; SEQ ID NO: 271; SEQ
20 ID NO: 272; SEQ ID NO: 273; SEQ ID NO: 274; SEQ ID NO: 275; SEQ ID NO: 276; SEQ
ID NO: 277; SEQ ID NO: 278; SEQ ID NO: 279; SEQ ID NO: 280; SEQ ID NO: 281; SEQ
ID NO: 282; SEQ ID NO: 283; SEQ ID NO: 284; SEQ ID NO: 285; SEQ ID NO: 286; SEQ
ID NO: 287; SEQ ID NO: 288; SEQ ID NO: 289; SEQ ID NO: 290; SEQ ID NO: 291; SEQ
ID NO: 293; SEQ ID NO: 294; SEQ ID NO: 295; SEQ ID NO: 296; SEQ ID NO: 297; SEQ
25 ID NO: 298; SEQ ID NO: 299; SEQ ID NO: 300; SEQ ID NO: 301; SEQ ID NO: 302; SEQ
ID NO: 303; SEQ ID NO: 304; SEQ ID NO: 305; SEQ ID NO: 306; SEQ ID NO: 307; SEQ
ID NO: 308; SEQ ID NO: 309; SEQ ID NO: 310; SEQ ID NO: 311; SEQ ID NO: 312; SEQ
ID NO: 313; SEQ ID NO: 314; SEQ ID NO: 315; SEQ ID NO: 316; SEQ ID NO: 317; SEQ
ID NO: 318; SEQ ID NO: 320; SEQ ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 323; SEQ
30 ID NO: 324; SEQ ID NO: 325; SEQ ID NO: 326; SEQ ID NO: 327; SEQ ID NO: 328; and
SEQ ID NO: 329

VII. Expression Profiles and Microarray Methods Of Use

In one aspect, the present invention provides methods for the reproducible measurement and assessment of the expression of specific mRNAs or proteins in a specific set of cells. One method combines and utilizes the techniques of laser capture microdissection, T7-based RNA amplification, production of cDNA from amplified RNA, and DNA microarrays containing immobilized DNA molecules for a wide variety of specific genes to produce a profile of gene expression analysis for very small numbers of specific cells. The desired cells are individually identified and attached to a substrate by the laser capture technique, and the captured cells are then separated from the remaining cells. RNA is then extracted from the captured cells and amplified about one million-fold using the T7-based amplification technique, and cDNA may be prepared from the amplified RNA. A wide variety of specific DNA molecules are prepared that hybridize with specific nucleic acids of the microarray, and the DNA molecules are immobilized on a suitable substrate. The cDNA made from the captured cells is applied to the microarray under conditions that allow hybridization of the cDNA to the immobilized DNA on the array. The expression profile of the captured cells is obtained from the analysis of the hybridization results using the amplified RNA or cDNA made from the amplified RNA of the captured cells, and the specific immobilized DNA molecules on the microarray. The hybridization results demonstrate, for example, which genes of those represented on the microarray as probes are hybridized to cDNA from the captured cells, and/or the amount of specific gene expression. The hybridization results represent the gene expression profile of the captured cells. The gene expression profile of the captured cells can be used to compare the gene expression profile of a different set of captured cells. The similarities and differences provide useful information for determining the differences in gene expression between different cell types, and differences between the same cell type under different conditions.

The techniques used for gene expression analysis are likewise applicable in the context of protein expression profiles. Total protein may be isolated from a cell sample and hybridized to a microarray comprising a plurality of protein-capture agents, which may include antibodies, receptor proteins, small molecules, and the like. Using any of several assays known in the art, hybridization may be detected and analyzed as described above. In the case of fluorescent detection, algorithms may be used to extract a protein expression profile representative of the particular cell type.

The present invention further relates to gene expression profiles and protein expression profiles that define a particular cell or tissue, or a particular cell or tissue state, *e.g.* a normal or diseased state. Such “cell type specific gene expression profiles” comprise genes that are only expressed in a particular cell, *i.e.*, are differentially expressed between cells.

5 Similarly, cell type specific protein expression profiles comprise proteins that are only expressed in a particular cell, *i.e.*, are differentially expressed between cells. A cell type specific expression profile may define a particular cell type including its origin within the body and cellular state. For example, a cell type gene or protein expression profile may define an epithelial cell and more particularly, an epithelial cell located in a specific tissue, an
10 epithelial cell at a specific stage of the cell cycle, an epithelial cell in a specific state of differentiation, an epithelial cell in an activated state, and/or an epithelial cell in a particular diseased state. Thus, the methodologies, microarrays, and algorithms of the present invention may be used to determine the phenotype of an unknown cell sample.

Moreover, all of the cell type specific gene and/or protein expression profiles may be
15 compiled together in a database to be used for a variety of applications. For example, the profiles and the database may be used in methods for approximating cell type and cell number of a mixed population of cells. Armed with a database of cell type specific gene and/or protein expression profiles, a gene or protein expression profile constructed from a mixed population of cells may be compared against the profile database. Using the
20 algorithms of the present invention, a user may identify the number and type of cells comprising the mixed population.

In addition, the profiles and database may be used in creating cell type specific gene or protein microarrays. A microarray may be produced that comprises genes or protein-
capture agents that represent all cell types or a specific set of cell types, for example, normal
25 colon cells and cancerous colon cells at different stages of disease progression.

The gene expression profiles, protein expression profiles, microarrays, and algorithms of the present invention may also be used to differentiate cell types (*e.g.*, neuron *v.* muscle cell). For example, mRNA isolated from two different cells may be hybridized to a microarray. The mRNA derived from each of the two cell types may be labeled with
30 different fluorophores so that they may be distinguished. *See e.g.*, Hacia et al., 26 NUCLEIC ACID RES. 3865-66, (1998); Schena et al., 270 SCIENCE 467-70 (1995). For example, mRNA from skeletal muscle cells may be synthesized using a fluorescein-12-UTP, and mRNA from neuronal cells, may be synthesized using biotin-16-UTP. The two mRNAs are then mixed

and hybridized to the microarray. The mRNA from skeletal muscle cells will, for example, fluoresce green when the fluorophore is stimulated and the mRNA from neuronal cells will, for example, fluoresce red. The relative signal intensity from each mRNA is determined, and an expression profile for each mRNA is generated and used to identify the cell type. An advantage of using mRNA labeled with two different fluorophores is that a direct and internally controlled comparison of the mRNA levels corresponding to each arrayed gene in the two cell types can be made, and variations due to minor differences in experimental conditions (*e.g.*, hybridization conditions) will not affect subsequent analyses.

In one aspect, the present invention provides gene and protein expression profile useful for identifying specific cell types. For example, the present invention contemplates gene and protein expression profiles generated from numerous cell types including, but not limited to, coronary artery endothelium, umbilical artery endothelium, umbilical vein endothelium, aortic endothelium, dermal microvascular endothelium, pulmonary artery endothelium, myometrium microvascular endothelium, keratinocyte epithelium, bronchial epithelium, mammary epithelium, prostate epithelium, renal cortical epithelium, renal proximal tubule epithelium, small airway epithelium, renal epithelium, umbilical artery smooth muscle, neonatal dermal fibroblast, pulmonary artery smooth muscle, dermal fibroblast, neural progenitor cells, skeletal muscle, astrocytes, aortic smooth muscle, mesangial cells, coronary artery smooth muscle, bronchial smooth muscle, uterine smooth muscle, lung fibroblast, osteoblasts, and prostate stromal cells.

Furthermore, the expression profiles and microarrays of the present invention may be used to distinguish normal tissue from diseased tissue, and in particular normal tissue from tumorigenic tissue. In addition, the present invention may also be used for patient diagnosis. Specifically, a patient sample may be hybridized to a microarray representing normal and diseased tissues. The resulting expression pattern of the patient sample may then be compared to the expression profile of a normal tissue sample to determine the disease progression status. For example, alterations in the level of expression of the prostate-specific antigen (PSA) may be indicative of prostate cancer and variations of the carcino-embryonic antigen (CEA) may be indicative of colon cancer.

The present invention also relates to methods of using the expression profiles and microarrays. For example, the gene expression profiles and protein expression profiles and microarrays may be used for drug and toxicity screening. Drugs often have side effects that are, in part, due to the lack of target specificity. *In vitro* assays provide limited information

on the specificity of a compound. In contrast, a microarray may reveal the spectrum of genes or proteins affected by a particular drug compound. In considering two different compounds both of which demonstrate specificity for a target protein (e.g., a receptor), if one compound affects the expression of ten genes or proteins and a second compound affects the expression of fifty genes or proteins, the first compound is more likely to have fewer side effects.

Because the identity of the genes or proteins is known or determinable, information on other affected genes is informative as to the nature of the side effects. A panel of genes or proteins may be used to test derivatives of a lead compound to determine which of the derivatives have greater specificity than the first compound.

Thus, microarray technology may be used to identify drug compounds that regulate gene and/or protein expression or possess similar mechanisms of action. This technology may also be used to create microarrays that model various diseases and in turn, novel drug compounds may be analyzed as potential therapeutics. In addition, microarrays may be generated that comprise the genes or proteins of one or more of a particular pathogen (e.g., bacteria, viruses, fungi). These microarrays may then be utilized to identify promising antibiotics, antiviral, or antifungal agents.

In another embodiment of the invention, a microarray corresponding to a population of genes or proteins isolated from a particular tissue or cell type is used to detect changes in gene transcription or protein expression which result from exposing the selected tissue or cells to a candidate drug. In this embodiment, tissue or cells derived from an organism, or an established cell line, may be exposed to the candidate drug *in vivo* or *ex vivo*. Thereafter, the gene transcripts, primarily mRNA, of the tissue or cells are isolated by methods well-known in the art. See, e.g., SAMBROOK ET AL. (1989). The isolated transcripts or cDNAs complementary to the mRNA are then contacted with a microarray, each microarray probe being specific for a different transcript, under conditions where the transcripts hybridize with a corresponding probe to form hybridization pairs. Similarly, protein may be isolated by methods well-known in the art. The isolated protein sample is then hybridized to a microarray comprising a plurality of protein-capture agents. The microarrays may provide, in aggregate, an ensemble of genes or proteins of the tissue or cell type sufficient to model the transcriptional and/or translational responsiveness of a drug candidate. A hybridization signal may then be detected at each hybridization pair to obtain an expression profile. This profile of the drug-stimulated cells may then be compared with an expression profile of control cells to obtain a specific drug response profile.

Similarly, for toxicity screening, a cell line or animal (*e.g.*, rat) may be treated with a particular toxin (*e.g.*, carcinogen, immunotoxin, cytotoxin, teratogen, pesticide) to determine its effects on gene expression. As described above, RNA or protein may be isolated from the treated cell line or a tissue (*e.g.*, liver) from the treated animal, and hybridized to a microarray
5 containing oligonucleotide probes or protein-capture agents. The resulting expression profiles may be compared to profiles generated from an untreated animal or cell line. An analysis of the expression pattern of the treated samples may reflect the effects of the particular toxin on gene expression, and possibly predict physiological effects.

This data may be used to identify genetic response profiles. Individual gene or
10 protein responses may be sorted to determine the specificity of each gene or protein to a particular stimulus. An expression profile may be established which weighs the signal patterns proportionally to the specificity of the response. Response profiles for an unknown stimulus (*e.g.*, new chemicals, unknown compounds) may be analyzed by comparing the new stimulus response profiles with response profiles to known chemical stimuli. If there is a
15 gene or protein match, then the response profile identifies a stimulus with the same target as one of the known compounds upon which the response profile database is based. For drug screening, if the response profile is a subset of cells in the support stimulated by a known compound, the new compound may be a candidate for a molecule with greater specificity than the reference compound.

20 Gene and/or protein expression profiles and microarrays may also be used to identify activating or non-activating compounds. Compounds that increase transcription rates or stimulate the activity of a protein are considered activating, and compounds that decrease rates or inhibit the activity of a protein are non-activating. The biological effects of a
25 compound may be reflected in the biological state of a cell. This state is characterized by the cellular constituents. One aspect of the biological state of a cell is its transcriptional state. The transcriptional state of a cell includes the identities and amounts of the constituent RNA species, especially mRNAs, in the cell under a given set of conditions. Thus, the gene expression profiles, microarrays, and algorithms of the present invention may be used to analyze and characterize the transcriptional state of a given cell or tissue following exposure
30 to an activating or non-activating compound.

The gene expression profiles, microarrays, and algorithms of the present invention may also be used to identify the components of cell signaling pathways. A cell signaling pathway is generally understood to be a collection of the cellular constituents (*e.g.*, DNA,

RNA, receptors, second messenger proteins, enzymes). The cellular constituents of a particular signaling pathway may be identified, for example, by variations in the transcription or translation rates. Each cellular constituent is typically influenced by at least one other cellular constituent. Thus, a cell may be exposed to a compound that interacts with a specific cellular constituent. For example, the cell may be exposed to varying concentrations of a specific receptor agonist. An analysis of variations in gene and/or protein expression as compared to an unexposed cell may reveal components of that particular receptor-signaling pathway. Thus, the cellular constituents that vary in a correlated pattern as the concentrations of the drug are increased may be identified as a component of the pathway originating at that drug.

The present invention may also be used to identify co-regulated genes. Similar variations in the transcriptional rate of a particular group of genes may reflect that these genes are similarly regulated. Thus, analysis of the transcriptional state of these genes may be accomplished by hybridization to microarrays. The level of hybridization to the microarray reflects the prevalence of the mRNA transcripts in the cell and may be used to determine if particular genes are co-regulated.

In another embodiment, the gene expression profiles and microarrays of the present invention may also be used to identify a class of diseases. For example, gene expression profiles or protein expression profiles may be used to distinguish tumor types (*e.g.*, lymphomas). By monitoring gene or protein expression, it may be possible to distinguish, for example, Hodgkin lymphoma from non-Hodgkin lymphoma. By identifying the lymphoma type, the appropriate clinical course may be implemented.

In addition, new tumor-associated genes or proteins may be identified by systemically comparing the expression of genes in tumor specimens with their expression in control tissue. For example, genes with elevated levels in tumor cells relative to normal cells, are candidates for genes encoding growth-promoting products (*e.g.*, oncogenes). In contrast, genes with reduced expression levels in tumors, are candidates for genes encoding growth-inhibiting products (*e.g.*, tumor suppressor genes or genes encoding apoptosis-inducing products). Thus, the expression profiles may point to the physiological function or malfunction of the gene product in the organism and shed light on possible treatments.

In a specific embodiment, the present invention provides endothelial cell gene expression profiles comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group

consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5;
 SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID
 NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO:
 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21;
 5 SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 48; SEQ ID NO: 63; SEQ ID NO: 70; SEQ
 ID NO: 82; SEQ ID NO: 94; and SEQ ID NO: 144.

In another embodiment, a muscle cell gene expression profile may comprise one or
 more nucleic acid sequences substantially homologous to a nucleic acid sequence or
 complementary sequence thereof selected from the group consisting of SEQ ID NO: 24; SEQ
 10 ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID
 NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO:
 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41;
 SEQ ID NO: 42; SEQ ID NO: 54; SEQ ID NO: 55; and SEQ ID NO: 69.

In an alternative embodiment, a primary cell gene expression profile comprises one or
 15 more nucleic acid sequences substantially homologous to a nucleic acid sequence or
 complementary sequence thereof selected from the group consisting of SEQ ID NO: 1; SEQ
 ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7;
 SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID
 NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO:
 20 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23;
 SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ
 ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID
 NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO:
 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 43; SEQ ID NO: 44; SEQ ID NO: 45;
 25 SEQ ID NO: 46; SEQ ID NO: 47; SEQ ID NO: 48; SEQ ID NO: 49; SEQ ID NO: 50; SEQ
 ID NO: 51; SEQ ID NO: 52; SEQ ID NO: 53; SEQ ID NO: 54; SEQ ID NO: 55; SEQ ID
 NO: 56; SEQ ID NO: 57; SEQ ID NO: 58; SEQ ID NO: 59; SEQ ID NO: 60; SEQ ID NO:
 61; SEQ ID NO: 62; SEQ ID NO: 63; SEQ ID NO: 64; SEQ ID NO: 65; SEQ ID NO: 66;
 SEQ ID NO: 67; SEQ ID NO: 68; SEQ ID NO: 69; SEQ ID NO: 70; SEQ ID NO: 71; SEQ
 30 ID NO: 72; SEQ ID NO: 73; SEQ ID NO: 74; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID
 NO: 77; SEQ ID NO: 78; SEQ ID NO: 79; SEQ ID NO: 80; SEQ ID NO: 81; SEQ ID NO:
 82; SEQ ID NO: 83; SEQ ID NO: 84; SEQ ID NO: 85; SEQ ID NO: 86; SEQ ID NO: 87;
 SEQ ID NO: 88; SEQ ID NO: 89; SEQ ID NO: 90; SEQ ID NO: 91; SEQ ID NO: 92; SEQ

ID NO: 93; SEQ ID NO: 94; SEQ ID NO: 95; SEQ ID NO: 96; SEQ ID NO: 97; SEQ ID NO: 98; SEQ ID NO: 99; SEQ ID NO: 100; SEQ ID NO: 101; SEQ ID NO: 102; SEQ ID NO: 103; SEQ ID NO: 104; SEQ ID NO: 105; SEQ ID NO: 106; SEQ ID NO: 107; SEQ ID NO: 108; SEQ ID NO: 109; SEQ ID NO: 110; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 113; SEQ ID NO: 114; SEQ ID NO: 115; SEQ ID NO: 116; SEQ ID NO: 118; SEQ ID NO: 119; SEQ ID NO: 120; SEQ ID NO: 121; SEQ ID NO: 122; SEQ ID NO: 123; SEQ ID NO: 124; SEQ ID NO: 125; SEQ ID NO: 126; SEQ ID NO: 127; SEQ ID NO: 128; SEQ ID NO: 129; SEQ ID NO: 130; SEQ ID NO: 131; SEQ ID NO: 132; SEQ ID NO: 133; SEQ ID NO: 134; SEQ ID NO: 135; SEQ ID NO: 136; SEQ ID NO: 137; SEQ ID NO: 138; SEQ ID NO: 139; SEQ ID NO: 140; SEQ ID NO: 141; SEQ ID NO: 142; SEQ ID NO: 143; SEQ ID NO: 144; SEQ ID NO: 145; SEQ ID NO: 146; SEQ ID NO: 147; SEQ ID NO: 148; SEQ ID NO: 149; SEQ ID NO: 150; SEQ ID NO: 151; SEQ ID NO: 152; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186.

20 The present invention also provides an epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group consisting of SEQ ID NO: 47; SEQ ID NO: 60; SEQ ID NO: 67; SEQ ID NO: 73; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ ID NO: 78; SEQ ID NO: 80; SEQ ID NO: 96; SEQ ID NO: 98; SEQ ID NO: 99; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 123; SEQ ID NO: 127; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186.

In yet another embodiment, a keratinocyte epithelial cell gene expression profile may comprise one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group consisting of SEQ ID NO: 187; SEQ ID NO: 188; SEQ ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ ID NO: 192; SEQ ID NO: 193; SEQ ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ ID NO: 197; SEQ ID NO: 198; SEQ ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ ID NO: 202; SEQ ID NO: 203; SEQ ID NO: 204; SEQ ID NO: 205; SEQ ID NO: 206; SEQ ID NO: 207; SEQ ID NO: 208; SEQ ID NO: 209; SEQ ID NO: 210; and SEQ ID NO: 211.

The present invention also provides a mammary epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group consisting of SEQ ID NO: 78; SEQ ID NO: 212; SEQ ID NO: 213; SEQ ID NO: 216; SEQ ID NO: 225; SEQ ID NO: 226; SEQ ID NO: 227; SEQ ID NO: 239; SEQ ID NO: 271; SEQ ID NO: 285; and SEQ ID NO: 289.

In an alternative embodiment, a bronchial epithelial cell gene expression profile may comprise one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group consisting of SEQ ID NO: 27; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 169; SEQ ID NO: 214; SEQ ID NO: 215; SEQ ID NO: 223; SEQ ID NO: 224; SEQ ID NO: 241; SEQ ID NO: 243; SEQ ID NO: 244; SEQ ID NO: 255; SEQ ID NO: 256; SEQ ID NO: 261; and SEQ ID NO: 314.

The present invention also provides a prostate epithelial cell gene expression profile, which may comprise one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group consisting of SEQ ID NO: 64; SEQ ID NO: 217; SEQ ID NO: 218; SEQ ID NO: 259; SEQ ID NO: 293; SEQ ID NO: 302; and SEQ ID NO: 320.

In yet another embodiment, a renal cortical epithelial cell gene expression profile may comprise one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group consisting of SEQ ID NO: 49; SEQ ID NO: 57; SEQ ID NO: 104; SEQ ID NO: 123; SEQ ID NO: 160; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 219; SEQ ID NO: 267; SEQ ID NO: 270; SEQ ID NO: 279; SEQ ID NO: 280; SEQ ID NO: 283; SEQ ID NO: 291; SEQ ID NO: 305; SEQ ID NO: 307; SEQ ID NO: 310; SEQ ID NO: 313; SEQ ID NO: 325; SEQ ID NO: 326; and SEQ ID NO: 327.

The present invention further provides renal proximal tubule epithelial cell gene expression profiles comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group consisting of SEQ ID NO: 106; SEQ ID NO: 138; SEQ ID NO: 158; SEQ ID NO: 228; SEQ ID NO: 236; SEQ ID NO: 242; SEQ ID NO: 250; SEQ ID NO: 258; SEQ ID NO: 260; SEQ ID NO: 262; SEQ ID NO: 266; SEQ ID NO: 272; SEQ ID NO: 273; SEQ ID NO: 274; SEQ ID NO: 275; SEQ ID NO: 276; SEQ ID NO: 278; SEQ ID NO: 284; SEQ ID NO: 288; SEQ ID NO: 295; SEQ ID NO: 296; SEQ ID NO: 297; SEQ ID NO: 299; SEQ ID NO: 300; SEQ ID NO: 301; SEQ ID NO: 306; SEQ ID NO: 308; SEQ ID NO: 309; SEQ ID NO: 311; SEQ ID NO: 316; SEQ ID NO: 318; SEQ ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 328; and SEQ ID NO: 329.

In a specific embodiment, a small airway epithelial cell gene expression profile may comprise one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group consisting of SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 183; SEQ ID NO: 220; SEQ ID NO: 221; SEQ ID NO: 222; SEQ ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ ID NO: 232; SEQ ID NO: 233; SEQ ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 237; SEQ ID NO: 238; SEQ ID NO: 240; SEQ ID NO: 245; SEQ ID NO: 246; SEQ ID NO: 247; SEQ ID NO: 248; SEQ ID NO: 249; SEQ ID NO: 251; SEQ ID NO: 252; SEQ ID NO: 254; SEQ ID NO: 257; SEQ ID NO: 263; SEQ ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 268; SEQ ID NO: 269; SEQ ID NO: 270; SEQ ID NO: 277; SEQ ID NO: 281; SEQ ID NO: 282; SEQ ID NO: 286; SEQ ID NO: 287; SEQ ID NO: 290; SEQ ID NO: 294; SEQ ID NO: 298; SEQ ID NO: 303; SEQ ID NO: 312; SEQ ID NO: 315; SEQ ID NO: 317; and SEQ ID NO: 319.

The present invention also provides a renal epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group consisting of SEQ ID NO: 37; SEQ ID NO: 253; SEQ ID NO: 304; SEQ ID NO: 323; and SEQ ID NO: 324.

In a specific embodiment, the present invention provides an endothelial cell protein expression profile comprising one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID

NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 48; SEQ ID NO: 63; SEQ ID NO: 70; SEQ ID NO: 82; SEQ ID NO: 94; and SEQ ID NO: 144.

The present invention also provides a muscle cell protein expression profile
 5 comprising one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID
 10 NO: 42; SEQ ID NO: 54; SEQ ID NO: 55; and SEQ ID NO: 69.

In another embodiment, a primary cell protein expression profile may comprise one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9;
 15 SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ
 20 ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 43; SEQ ID NO: 44; SEQ ID NO: 45; SEQ ID NO: 46; SEQ ID NO: 47; SEQ ID NO: 48; SEQ ID NO: 49; SEQ ID NO: 50; SEQ ID NO: 51; SEQ ID NO: 52; SEQ ID NO: 53; SEQ ID NO: 54; SEQ ID NO: 55; SEQ ID NO: 56; SEQ ID NO: 57; SEQ ID NO: 58; SEQ ID NO: 59; SEQ ID NO: 60; SEQ ID NO: 61; SEQ ID NO: 62; SEQ ID
 25 NO: 63; SEQ ID NO: 64; SEQ ID NO: 65; SEQ ID NO: 66; SEQ ID NO: 67; SEQ ID NO: 68; SEQ ID NO: 69; SEQ ID NO: 70; SEQ ID NO: 71; SEQ ID NO: 72; SEQ ID NO: 73; SEQ ID NO: 74; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ ID NO: 78; SEQ ID NO: 79; SEQ ID NO: 80; SEQ ID NO: 81; SEQ ID NO: 82; SEQ ID NO: 83; SEQ ID NO: 84; SEQ ID NO: 85; SEQ ID NO: 86; SEQ ID NO: 87; SEQ ID NO: 88; SEQ ID NO:
 30 89; SEQ ID NO: 90; SEQ ID NO: 91; SEQ ID NO: 92; SEQ ID NO: 93; SEQ ID NO: 94; SEQ ID NO: 95; SEQ ID NO: 96; SEQ ID NO: 97; SEQ ID NO: 98; SEQ ID NO: 99; SEQ ID NO: 100; SEQ ID NO: 101; SEQ ID NO: 102; SEQ ID NO: 103; SEQ ID NO: 104; SEQ ID NO: 105; SEQ ID NO: 106; SEQ ID NO: 107; SEQ ID NO: 108; SEQ ID NO: 109; SEQ

ID NO: 110; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 113; SEQ ID NO: 114; SEQ ID NO: 115; SEQ ID NO: 116; SEQ ID NO: 118; SEQ ID NO: 119; SEQ ID NO: 120; SEQ ID NO: 121; SEQ ID NO: 122; SEQ ID NO: 123; SEQ ID NO: 124; SEQ ID NO: 125; SEQ ID NO: 126; SEQ ID NO: 127; SEQ ID NO: 128; SEQ ID NO: 129; SEQ ID NO: 130; SEQ ID NO: 131; SEQ ID NO: 132; SEQ ID NO: 133; SEQ ID NO: 134; SEQ ID NO: 135; SEQ ID NO: 136; SEQ ID NO: 137; SEQ ID NO: 138; SEQ ID NO: 139; SEQ ID NO: 140; SEQ ID NO: 141; SEQ ID NO: 142; SEQ ID NO: 143; SEQ ID NO: 144; SEQ ID NO: 145; SEQ ID NO: 146; SEQ ID NO: 147; SEQ ID NO: 148; SEQ ID NO: 149; SEQ ID NO: 150; SEQ ID NO: 151; SEQ ID NO: 152; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186.

In yet another embodiment, an epithelial cell protein expression profile may comprise one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 47; SEQ ID NO: 60; SEQ ID NO: 67; SEQ ID NO: 73; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ ID NO: 78; SEQ ID NO: 80; SEQ ID NO: 96; SEQ ID NO: 98; SEQ ID NO: 99; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 123; SEQ ID NO: 127; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186.

The present invention further provides a keratinocyte epithelial cell protein expression profile comprising one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 187; SEQ ID NO: 188; SEQ ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ ID NO: 192; SEQ ID

NO: 193; SEQ ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ ID NO: 197; SEQ ID NO: 198; SEQ ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ ID NO: 202; SEQ ID NO: 203; SEQ ID NO: 204; SEQ ID NO: 205; SEQ ID NO: 206; SEQ ID NO: 207; SEQ ID NO: 208; SEQ ID NO: 209; SEQ ID NO: 210; and SEQ ID NO: 211.

5 In another embodiment, a mammary epithelial cell protein expression profile may comprise one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 78; SEQ ID NO: 212; SEQ ID NO: 213; SEQ ID NO: 216; SEQ ID NO: 225; SEQ ID NO: 226; SEQ ID NO: 227; SEQ ID NO: 239; SEQ ID NO: 271; SEQ ID NO: 285; and SEQ ID NO: 289.

10 Still further, the present invention provides a bronchial epithelial cell protein expression profile comprising one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 27; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 169; SEQ ID NO: 214; SEQ ID NO: 215; SEQ ID NO: 223; SEQ ID NO: 224; SEQ ID NO: 241; SEQ ID NO: 243; SEQ ID NO: 244; 15 SEQ ID NO: 255; SEQ ID NO: 256; SEQ ID NO: 261; and SEQ ID NO: 314.

In yet another embodiment, a prostate epithelial cell protein expression profile comprises one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 64; SEQ ID NO: 217; SEQ ID NO: 218; SEQ ID NO: 259; SEQ ID NO: 293; SEQ ID NO: 302; and SEQ ID 20 NO: 320.

The present invention also provides a renal cortical epithelial cell protein expression profile comprising one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 49; SEQ ID NO: 57; SEQ ID NO: 104; SEQ ID NO: 123; SEQ ID NO: 160; SEQ ID NO: 165; SEQ ID 25 NO: 166; SEQ ID NO: 219; SEQ ID NO: 267; SEQ ID NO: 270; SEQ ID NO: 279; SEQ ID NO: 280; SEQ ID NO: 283; SEQ ID NO: 291; SEQ ID NO: 305; SEQ ID NO: 307; SEQ ID NO: 310; SEQ ID NO: 313; SEQ ID NO: 325; SEQ ID NO: 326; and SEQ ID NO: 327.

In an alternative embodiment, a renal proximal tubule epithelial cell protein expression profile may comprise one or more amino acid sequences encoded by all or a 30 portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 106; SEQ ID NO: 138; SEQ ID NO: 158; SEQ ID NO: 228; SEQ ID NO: 236; SEQ ID NO: 242; SEQ ID NO: 250; SEQ ID NO: 258; SEQ ID NO: 260; SEQ ID NO: 262; SEQ ID NO: 266; SEQ ID NO: 272; SEQ ID NO: 273; SEQ ID NO: 274; SEQ ID NO: 275; SEQ ID

NO: 276; SEQ ID NO: 278; SEQ ID NO: 284; SEQ ID NO: 288; SEQ ID NO: 295; SEQ ID NO: 296; SEQ ID NO: 297; SEQ ID NO: 299; SEQ ID NO: 300; SEQ ID NO: 301; SEQ ID NO: 306; SEQ ID NO: 308; SEQ ID NO: 309; SEQ ID NO: 311; SEQ ID NO: 316; SEQ ID NO: 318; SEQ ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 328; and SEQ ID NO: 329.

5 The present invention also provides a small airway epithelial cell protein expression profile comprising one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 183; SEQ ID NO: 220; SEQ ID NO: 221; SEQ ID NO: 222; SEQ ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ ID NO: 232; SEQ ID NO: 233; SEQ ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 237; SEQ ID NO: 238; SEQ ID NO: 240; SEQ ID NO: 245; SEQ ID NO: 246; SEQ ID NO: 247; SEQ ID NO: 248; SEQ ID NO: 249; SEQ ID NO: 251; SEQ ID NO: 252; SEQ ID NO: 254; SEQ ID NO: 257; SEQ ID NO: 263; SEQ ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 268; SEQ ID NO: 269; SEQ ID NO: 270; SEQ ID NO: 277; SEQ ID NO: 281; SEQ ID NO: 282; SEQ ID NO: 286; SEQ ID NO: 287; SEQ ID NO: 290; SEQ ID NO: 294; SEQ ID NO: 298; SEQ ID NO: 303; SEQ ID NO: 312; SEQ ID NO: 315; SEQ ID NO: 317; and SEQ ID NO: 319.

 In a further embodiment, a renal epithelial cell protein expression profile comprises one or more amino acid sequences encoded by all or a portion of one or more nucleic acid sequences selected from the group consisting of SEQ ID NO: 37; SEQ ID NO: 253; SEQ ID NO: 304; SEQ ID NO: 323; and SEQ ID NO: 324.

 In addition, the protein expression profiles may be used to create a database and to create specific protein microarrays. Furthermore, the protein microarrays, protein expression profiles, and protein expression profile databases may be useful for epitope mapping, the study of protein-protein interaction, binding of drug candidates to a plurality of proteins, drug-drug interaction (*e.g.*, competition binding studies of two drug candidates), binding of a plurality of drug candidates to a single or several proteins, diagnostics, or antigen mapping.

VIII. High Information Density Genes And Proteins

 Although it is possible to analyze the expression of all genes expressed in a cell, a significant number of genes are expressed so infrequently and thus are of limited value in generating gene expression profiles. On the other hand, a number of genes are sufficiently expressed in a cell or differentially expressed between cells to make them useful in analyzing gene expression data. Accordingly, the present invention further provides methods for identifying the subset of genes or proteins that provides the most utility in analyzing gene and

protein expression. This subset is termed “high information density genes” and “high information density proteins” and may be used to build microarrays useful for analyzing gene and protein expression and generating gene expression profiles and protein expression profiles.

5 Indeed, the construction of microarrays comprising nucleic acid sequences or protein-capture agents that represent high information density genes or proteins provides a means for efficiently analyzing gene or protein expression. For example, such microarrays may be universally useful for diagnosing one or many diseases. The high information density gene or protein microarrays of the present invention may comprise the least number of genes or
10 protein-capture agents that are the most useful to researchers and healthcare providers. The microarray may include the least number of genes or protein-capture agents that produce the most specific results with the highest accuracy, specificity, and sensitivity.

 More particularly, high information density genes or proteins may be identified by assessing the information content of one or more genes comprising one or more gene
15 expression profiles or one or more proteins comprising one or more protein expression profiles. Genes or proteins providing the highest amount of information content comprise high information density genes or proteins. A high information density gene or protein provides more “information” about a particular tissue type and/or tissue state, as opposed to a gene or protein that is expressed infrequently and, therefore, is of limited value in
20 expression analyses.

 Information content may be based upon, but not limited to, the magnitude of response of a gene or protein relative to a reference state or a separate reference gene or protein. For
25 example, the reference state may be baseline expression at a certain time point, such as prior to treatment, or may refer to a physiological state, such as being healthy or status prior to treatment. Another basis for assessing information content is the frequency of detected expression across categories of tissue, diseases, or patients compared to a reference category such as unstimulated or uninfected patients. Information content may also refer to changes in expression levels relative to categories of cells, tissues, organs, or patients.

 Methods for identifying high information density genes or proteins that may be used
30 to generate the high information density expression profiles, via the use of microarrays comprising nucleic acids or protein-capture agents representing such genes or proteins, involve algorithms that generate the high information density expression profiles. Using algorithms, genes or proteins may be ranked against each other to determine the relative

information content of each gene or protein analyzed. For example, the basis for ranking genes for information content may be an algorithm adding together the number of times the gene or protein is expressed among all categories and time-points, then dividing that number by the sample set size. Furthermore, information content may be subcategorized using an algorithm that ranks the average change in expression level in all instances in which the gene or protein was expressed by the average number of times expressed.

High information density genes or proteins may be selected using an algorithm that ranks expression levels across all tissues, stimuli, and times with weighing in favor of expression that may be greatly increased or decreased among the sets. For example, high information density genes or proteins may be selected using an algorithm that correlates about 90% gene or protein expression in all cell lines or tissues with greater than about a 50% increase or decrease in expression occurring through time or after treatment with all stimuli.

High information density genes or proteins may also be selected using an algorithm that correlates a unique expression profile observed in a single cell line or tissue to a specific disease state for diagnosis or correlates to a treatment modality that may predict a positive or negative outcome. An algorithm that correlates a change in the expression profile in a single cell line or tissue to a specific disease state for diagnosis or a treatment modality that may predict a positive or negative outcome may be used as well. Further, an algorithm that correlates a change in a combination of expression profiles in a single cell line or tissue to a specific disease state for diagnosis, or a treatment modality that may predict a positive or negative outcome, may be used to select high information density genes or proteins.

High information density genes or proteins may be selected from categories that are based on patient characteristics including, for example, gender, age, disease-state, and treatment regime. Another basis for selecting high information density genes or proteins is the time of gene expression. This may include, for example, different times in a disease course, different times after stimuli exposure, different times in organismal development, or different times in the cell cycle. Another selection basis may be an increase or decrease in gene or protein expression in response to a stimulus. For example, the stimulus may include environmental alteration, viral or bacterial infection, drug exposure, protein activation, protein deactivation, chemical exposure, and cell isolation procedure.

Of the various stimuli, environmental alterations may include alterations such as changes in temperature, gas pressure, gas concentration, osmolarity, humidity, and pH. Viral stimuli may include, for example, infection with different viruses such as papilloma viruses,

lentiviruses, retroviruses, hepadnaviruses, alphaviruses, flaviviruses, rhabdoviruses, herpesviruses, adenoviruses, picornaviruses, reoviruses, coronaviruses, pox viruses, paramyxoviruses, togaviruses, and arenaviruses. Bacterial stimuli may include, but may not be limited to, lipopolysaccharide, formylmethionine, bacterial heat shock proteins and

5 lipoteichoic acid.

Drug exposure stimuli may include, for example, metabolic regulators, calcium ionophores, G protein regulators, translation regulators, and transcription regulators. Protein stimuli may include proteins such as cytokines, matrix proteins, cell surface ligands, acute phase proteins, clotting factors, vasoactive proteins, and mismatched Major

10 Histocompatibility antigens among others. Examples of chemical stimuli include organic compounds, inorganic compounds, metals, and other chemical elements. Examples of cell isolation-procedures stimuli include density gradient purification, chemical digestion, mechanical disaggregation, and centrifugation.

Once identified, the high information density genes may be used to create high

15 information density gene microarrays. Similarly, high information density proteins may be used to create high information density protein microarrays. The high information density microarrays may represent a particular tissue type, such as heart, liver, prostate, lung, nerve, muscle, or connective tissue; coronary artery endothelium, umbilical artery endothelium, umbilical vein endothelium, aortic endothelium, dermal microvascular endothelium,

20 pulmonary artery endothelium, myometrium microvascular endothelium, keratinocyte epithelium, bronchial epithelium, mammary epithelium, prostate epithelium, renal cortical epithelium, renal proximal tubule epithelium, small airway epithelium, renal epithelium, umbilical artery smooth muscle, neonatal dermal fibroblast, pulmonary artery smooth muscle, dermal fibroblast, neural progenitor cells, skeletal muscle, astrocytes, aortic smooth muscle,

25 mesangial cells, coronary artery smooth muscle, bronchial smooth muscle, uterine smooth muscle, lung fibroblast, osteoblasts, and prostate stromal cells.

The high information density microarrays may be used in the applications described in the present application. For example, the high information density microarrays may be used to diagnose a patient and predict treatment effectiveness. The microarray may comprise

30 the fewest genes or protein-capture agents necessary to produce the most accurate, reproducible, and specific results that correlate to a positive outcome. Once a treatment course begins, the microarray may be used to generate a gene expression profile or a protein expression profile that correlates to a particular outcome. The clinician may then use this

information to adjust or change therapy accordingly. The microarray itself may contain genes or protein-capture agents that provide the highest amount of information on at least one type but possibly all therapies, for at least one but possibly all diseases.

Used in diagnostic applications, the high-information density microarray may be compared to standard diagnostic pathologies. Specificity, sensitivity, accuracy, predictive value, and standard error of the microarray may be assessed, as well as confidence intervals and prevalence of a disease in a population using standard techniques. Such diagnostic microarrays may be validated based on at least one of the following parameters or combinations thereof described below, wherein "a" represents the number of true positives, "b" represents the number of false positives, "c" represents the number of false negatives, and "d" represents the number of true negatives.

For example, sensitivity may be defined as $a/a+c \times 100$ and indicates the percentage of individuals with the disease that have positive test results. Specificity may be defined as $d/b+d$ and indicates the percentage of individuals who do not have the particular disease and have negative test results. Accuracy (efficiency) may be defined as $a+d/a+b+c+d \times 100$ and may be the percentage of true positive and true negative test results that are correctly identified by the test. Prevalence may be defined as $a+c/a+b+c+d \times 100$ and may be the frequency of disease in the population at a given time based on the incidence of disease per year per 100,000 people.

Positive predictive value may be defined as $a/a+b \times 100$ and may be the percentage of true positive test results based on the prevalence of disease in the population. Negative predictive value may be defined as $d/c+d \times 100$ and may be the percentage of true negative test results based on the prevalence of disease in the population.

The standard error (SE) of the diagnostic microarrays may be calculated using the following formula: $SE = ((p) \times ((1-p)/n))^{1/2}$, where p = sensitivity of the test and n = sample size. The 95% confidence interval may be calculated by the formula: $p - (1.96 \times SE)$ to $p + (1.96 \times SE)$, where p = sensitivity of the test and "1.96" may be derived from statistical tables. The high information density microarray may have a gene or combination of genes or a protein-capture agent or a combination of protein-capture agents that yield the highest sensitivity, specificity and accuracy over the widest range of standards, and also offers the best positive and negative predictive value for the most applications.

In another embodiment, a high information-density microarray may comprise the genes or protein-capture agents that best diagnose leukemia in the most patients with the

highest accuracy. Such diagnostic genes may be 100% sensitive, 100% specific and 100% accurate. A microarray may also include a combination of genes or protein-capture agents that together, rather than individually, yield high sensitivity, specificity, and accuracy, thus diagnosing leukemia with 100% sensitivity, specificity and accuracy. For example, any two
5 separate genes or protein-capture agents may only offer 50% or less sensitivity, specificity, or accuracy for diagnosis leukemia individually, but if combined on the same microarray the specificity may reach 100% because these genes or proteins are only found together when the patient has leukemia. Hence, the gene or combination of genes or protein or combination of proteins that yield the highest information content on leukemia diagnosis may be included on
10 the microarray.

For predicting treatment efficiency, the microarray may contain the genes or protein-capture agents that best predict treatment outcome for leukemia in patients. An expression profile specific for either positive or negative treatment outcome may be 100% sensitive, 100% specific and 100% accurate. A microarray may also include a combination of genes or
15 protein-capture agents that together, rather than individually, predict outcomes of treatments with 100% sensitivity, specificity, and accuracy. For example, any two separate genes or protein-capture agents may only offer 50% or less sensitivity, specificity, or accuracy for outcomes of various treatment modalities for leukemia individually, but when they are combined the microarray may indicate the outcome of a specific patient treatment with
20 sufficient, preferably 100%, accuracy. Thus, the combinations that yield the highest information content on leukemia treatment modality may be included on the microarray.

The high information-density microarrays may be used for indicating when, for example, erythropoietin (EPO) treatment would be appropriate for a patient or for monitoring drug effectiveness during such treatment. The expression profiles used on the microarray
25 may be one gene or protein-capture agent that may be 100% specific, 100% sensitive, and 100% accurate for indicating when EPO may be provided as a treatment or determining EPO treatment effectiveness or a combination of genes or protein-capture agents that provides the same accuracy. Accordingly, the microarray can provide valuable information on when EPO is appropriate as a course of treatment and when EPO is effective in that treatment. In like
30 manner, a microarray may be used for indicating when cytokine treatment, such as Interleukin 5, Granulocyte Stimulating Factor, Interleukin 2, and Interleukin 12, would be appropriate for a patient during or after chemotherapy or radiation therapy, or for monitoring drug effectiveness during such treatment.

Cancer treatment is an important field in which these types of microarrays may efficiently be used to indicate when a patient has cancer, the type of cancer the patient has, as well as the best treatment modality and prognosis of the patient. The microarray may also be used to monitor drug effectiveness during cancer treatment by measuring whether cancer is present and to what extent. As an example, and without limitation, the microarray may be used for indicating when a patient has Human Immunodeficiency Virus (HIV), the best treatment modality for that patient, and the prognosis of the patient. By measuring whether HIV is present and to what extent, a microarray containing expression profiles from either the host or pathogen may be used as well to monitor drug effectiveness during HIV treatment.

The nucleic acid and protein microarrays of the present invention may be useful as a diagnostic tool in assessing the effects of treatment with a compound on relative gene and protein expression. In one embodiment of the present invention, the methods described herein may be used to assess the pharmacological effects of one or more of the following growth factors, proteins, cytokines or peptides. The genes and protein-capture agents of the present invention may be specific to such growth factors, proteins, cytokines, and peptides or relate to their expression levels.

Briefly, growth factors are hormones or cytokine proteins that bind to receptors on the cell surface, with the primary result of activating cellular proliferation and/or differentiation. Many growth factors are quite versatile, stimulating cellular division in numerous different cell types, while others are specific to a particular cell-type. The following Table 1 presents several factors, but is not intended to be comprehensive or complete, yet introduces some of the more commonly known factors and their principal activities.

Table 1: Growth Factors

| Factor | Principal Source | Primary Activity | Comments |
|---------------------------------------|---|---|--|
| Platelet Derived Growth Factor (PDGF) | Platelets, endothelial cells, placenta. | Promotes proliferation of connective tissue, glial and smooth muscle cells. PDGF receptor has intrinsic tyrosine kinase activity. | Dimer required for receptor binding. Two different protein chains, A and B, form 3 distinct dimer forms. |
| Epidermal Growth Factor (EGF) | Submaxillary gland, Brunners gland. | promotes proliferation of mesenchymal, glial and epithelial cells | EGF receptor has tyrosine kinase activity, activated in response to EGF binding. |
| Fibroblast Growth Factor | Wide range of cells; protein is associated with | Promotes proliferation of many cells including skeletal | Four distinct receptors, all with |

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| (FGF) | the ECM; nineteen family members. Receptors widely distributed in bone, implicated in several bone-related diseases. | and nervous system; inhibits some stem cells; induces mesodermal differentiation. Non-proliferative effects include regulation of pituitary and ovarian cell function. | tyrosine kinase activity. FGF implicated in mouse mammary tumors and Kaposi's sarcoma. |
| NGF | | Promotes neurite outgrowth and neural cell survival | Several related proteins first identified as proto-oncogenes; <i>trkA</i> (<i>trackA</i>), <i>trkB</i> , <i>trkC</i> |
| Erythropoietin (Epo) | Kidney | Promotes proliferation and differentiation of erythrocytes | Also considered a 'blood protein,' and a colony stimulating factor. |
| Transforming Growth Factor α (TGF- α) | Common in transformed cells, found in macrophages and keratinocytes | Potent keratinocyte growth factor. | Related to EGF. |
| Transforming Growth Factor γ (TGF- β) | Tumor cells, activated TH ₁ cells (T-helper) and natural killer (NK) cells | Anti-inflammatory (suppresses cytokine production and class II MHC expression), proliferative effects on many mesenchymal and epithelial cell types, may inhibit macrophage and lymphocyte proliferation. | Large family of proteins including activin, inhibin and bone morpho-genetic protein. Several classes and subclasses of cell-surface receptors |
| Insulin-Like Growth Factor-I (IGF-I) | Primarily liver, produced in response to GH and then induces subsequent cellular activities, particularly on bone growth | Promotes proliferation of many cell types, autocrine and paracrine activities in addition to the initially observed endocrine activities on bone. | Related to IGF-II and proinsulin, also called Somatomedin C. IGF-I receptor, like the insulin receptor, has intrinsic tyrosine kinase activity. IGF-I can bind to the insulin receptor. |
| Insulin-Like Growth Factor-II (IGF-II) | Expressed almost exclusively in embryonic and neonatal tissues. | Promotes proliferation of many cell types primarily of fetal origin. Related to IGF-I and proinsulin. | IGF-II receptor is identical to the mannose-6-phosphate receptor that is responsible for the integration of lysosomal enzymes |

Additional growth factors that may be utilized within the methodologies of the present invention include insulin and proinsulin (U.S. Patent No. 4,431,740); Activin (Vale et al., 321 NATURE 776 (1986); Ling et al., 321 NATURE 779 (1986)); Inhibin (U.S. Patent Nos. 4,740,587; 4,737,578); and Bone Morphogenic Proteins (BMPs) (U.S. Patent No. 5,846,931; WOZNEY, CELLULAR & MOLECULAR BIOLOGY OF BONE 131-167 (1993)).

Additional growth factors that may be utilized within the methodologies of the present invention include Activin (Vale et al., 321 NATURE 776 (1986); Ling et al., 321 NATURE 779 (1986)), Inhibin (U.S. Patent Nos. 4,737,578; 4,740,587), and Bone Morphogenic Proteins (BMPs) (U.S. Patent No. 5,846,931; WOZNEY, CELLULAR & MOLECULAR BIOLOGY OF BONE 131-67 (1993)).

In another embodiment, the methodologies of the present invention may be used to assess the pharmacological effects a cytokine or cytokine receptor on a patient or cell line. Secreted primarily from leukocytes, cytokines stimulate both the humoral and cellular immune responses, as well as the activation of phagocytic cells. Cytokines that are secreted from lymphocytes are termed lymphokines, whereas those secreted by monocytes or macrophages are termed monokines. A large family of cytokines are produced by various cells of the body. Many of the lymphokines are also known as interleukins (ILs), because they are not only secreted by leukocytes, but are also able to affect the cellular responses of leukocytes. More specifically, interleukins are growth factors targeted to cells of hematopoietic origin. The list of identified interleukins grows continuously. *See, e.g.*, U.S. Patent No. 6,174,995; U.S. Patent No. 6,143,289; Sallusto et al., 18 ANNU. REV. IMMUNOL. 593 (2000); Kunkel et al., 59 J. LEUKOCYTE BIOL. 81 (1996).

Additional growth factor/cytokines encompassed in the methodologies of the present invention include pituitary hormones such as CEA, FSH, FSH α , FSH β , Human Chorionic Gonadotrophin (HCG), HCG α , HCG β , uFSH (urofollitropin), GH, LH, LH α , LH β , PRL, TSH, TSH α , TSH β , and CA, parathyroid hormones, follicle stimulating hormones, estrogens, progesterones, testosterone, or structural or functional analog thereof. All of these proteins and peptides are known in the art. Many may be obtained commercially from, e.g., Research Diagnostics, Inc. (Flanders, N.J.).

The cytokine family also includes tumor necrosis factors, colony stimulating factors, and interferons. *See, e.g.*, Cosman, 7 BLOOD CELL (1996); Gruss et al., 85 BLOOD 3378 (1995); Beutler et al., 7 ANNU. REV. IMMUNOL. 625 (1989); Aggarwal et al., 260 J. BIOL. CHEM. 2345 (1985); Pennica et al., 312 NATURE 724 (1984); R & D Systems, CYTOKINE MINI-REVIEWS, at <http://www.rndsystems.com>.

Several cytokines are introduced, briefly, in Table 2 below.

Table 2: Cytokines

| Cytokine | Principal Source | Primary Activity |
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| Interleukins | Primarily macrophages but also neutrophils, endothelial cells, smooth | Costimulation of APCs and T cells; stimulates IL-2 receptor production and |

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| IL-1- α and - β | muscle cells, glial cells, astrocytes, B- and T-cells, fibroblasts, and keratinocytes. | expression of interferon- γ ; may induce proliferation in non-lymphoid cells. |
| IL-2 | CD4 ⁺ T-helper cells, activated TH ₁ cells, NK cells. | Major interleukin responsible for clonal T-cell proliferation. IL-2 also exerts effects on B-cells, macrophages, and natural killer (NK) cells. IL-2 receptor is not expressed on the surface of resting T-cells, but expressed constitutively on NK cells, that will secrete TNF- α , IFN- γ and GM-CSF in response to IL-2, which in turn activate macrophages. |
| IL-3 | Primarily T-cells | Also known as multi-CSF, as it stimulates stem cells to produce all forms of hematopoietic cells. |
| IL-4 | TH ₂ and mast cells | B cell proliferation, eosinophil and mast cell growth and function, IgE and class II MHC expression on B cells, inhibition of monokine production |
| IL-5 | TH ₂ and mast cells | eosinophil growth and function |
| IL-6 | Macrophages, fibroblasts, endothelial cells and activated T-helper cells. Does not induce cytokine expression. | IL-6 acts in synergy with IL-1 and TNF- α in many immune responses, including T-cell activation; primary inducer of the acute-phase response in liver; enhances the differentiation of B-cells and their consequent production of immunoglobulin; enhances Glucocorticoid synthesis. |
| IL-7 | thymic and marrow stromal cells | T and B lymphopoiesis |
| IL-8 | Monocytes, neutrophils, macrophages, and NK cells. | Chemoattractant (chemokine) for neutrophils, basophils and T-cells; activates neutrophils to degranulate. |
| IL-9 | T cells | hematopoietic and thymopoietic effects |
| IL-10 | activated TH ₂ cells, CD8 ⁺ T and B cells, macrophages | inhibits cytokine production, promotes B cell proliferation and antibody production, suppresses cellular immunity, mast cell growth |
| IL-11 | stromal cells | synergistic hematopoietic and thrombopoietic effects |
| IL-12 | B cells, macrophages | proliferation of NK cells, INF- γ production, promotes cell-mediated immune functions |
| IL-13 | TH ₂ cells | IL-4-like activities |
| IL-18 | macrophages/Kupffer cells, keratinocytes, glucocorticoid-secreting adrenal cortex cells, and osteoblasts | Interferon-gamma-inducing factor with potent pro-inflammatory activity |
| IL-21 | Activated T cells | IL21 has a role in proliferation and maturation of natural killer (NK) cell populations from bone marrow, in the proliferation of mature B-cell populations co-stimulated with anti-CD40, and in the proliferation of T cells co-stimulated with |

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| | | anti-CD3. |
| IL-23 | Activated dendritic cells | A complex of p19 and the p40 subunit of IL-12. IL-23 binds to IL-12R beta 1 but not IL-12R beta 2; activates Stat4 in PHA blast T cells; induces strong proliferation of mouse memory T cells; stimulates IFN-gamma production and proliferation in PHA blast T cells, as well as in CD45RO (memory) T cells. |
| Tumor Necrosis Factor TNF- α | Primarily activated macrophages. | Once called cachectin; induces the expression of other autocrine growth factors, increases cellular responsiveness to growth factors; induces signaling pathways that lead to proliferation; induces expression of a number of nuclear proto-oncogenes as well as of several interleukins. |
| (TNF- β) | T-lymphocytes, particularly cytotoxic T-lymphocytes (CTL cells); induced by IL-2 and antigen-T-Cell receptor interactions. | Also called lymphotoxin; kills a number of different cell types, induces terminal differentiation in others; inhibits lipoprotein lipase present on the surface of vascular endothelial cells. |
| Interferons INF- α and - β | macrophages, neutrophils and some somatic cells | Known as type I interferons; antiviral effect; induction of class I MHC on all somatic cells; activation of NK cells and macrophages. |
| Interferon INF- γ | Primarily CD8+ T-cells, activated TH ₁ and NK cells | Type II interferon; induces of class I MHC on all somatic cells, induces class II MHC on APCs and somatic cells, activates macrophages, neutrophils, NK cells, promotes cell-mediated immunity, enhances ability of cells to present antigens to T-cells; antiviral effects. |
| Monocyte Chemoattractant Protein-1 (MCP1) | Peripheral blood monocytes/macrophages | Attracts monocytes to sites of vascular endothelial cell injury, implicated in atherosclerosis. |
| Colony Stimulating Factors (CSFs) | | Stimulate the proliferation of specific pluripotent stem cells of the bone marrow in adults. |
| Granulocyte-CSF (G-CSF) | | Specific for proliferative effects on cells of the granulocyte lineage; proliferative effects on both classes of lymphoid cells. |
| Macrophage-CSF (M-CSF) | | Specific for cells of the macrophage lineage. |
| Granulocyte-MacrophageCSF (GM-CSF) | | Proliferative effects on cells of both the macrophage and granulocyte lineages. |

Other cytokines of interest that may be characterized by the invention described herein include adhesion molecules (R & D Systems, ADHESION MOLECULES I (1996), available at <http://www.rndsystems.com>); angiogenin (U.S. Patent No. 4,721,672; Moener et al., 226 EUR. J. BIOCHEM. 483 (1994)); annexin V (Cookson et al., 20 GENOMICS 463 (1994); Grundmann et al., 85 PROC. NATL. ACAD. SCI. USA 3708 (1988); U.S. Patent No. 5,767,247); caspases (U.S. Patent No. 6,214,858; Thornberry et al., 281 SCIENCE 1312 (1998)); chemokines (U.S. Patent Nos. 6,174,995; 6,143,289; Sallusto et al., 18 ANNU. REV. IMMUNOL. 593 (2000) Kunkel et al., 59 J. LEUKOCYTE BIOL. 81 (1996)); endothelin (U.S. Patent Nos. 6,242,485; 5,294,569; 5,231,166); eotaxin (U.S. Patent No. 6,271,347; Ponath et al., 97(3) J. CLIN. INVEST. 604-612 (1996)); Flt-3 (U.S. Patent No. 6,190,655); heregulins (U.S. Patent Nos. 6,284,535; 6,143,740; 6,136,558; 5,859,206; 5,840,525); Leptin (Leroy et al., 271(5) J. BIOL. CHEM. 2365 (1996); Maffei et al., 92 PNAS 6957 (1995); Zhang et al. (1994) NATURE 372: 425-432); Macrophage Stimulating Protein (MSP) (U.S. Patent Nos. 6,248,560; 6,030,949; 5,315,000); Neurotrophic Factors (U.S. Patent Nos. 6,005,081; 5,288,622); Pleiotrophin/Midkine (PTN/MK) (Pedraza et al., 117 J. BIOCHEM. 845 (1995); Tamura et al., 3 ENDOCRINE 21 (1995); U.S. Patent No. 5,210,026; Kadomatsu et al., 151 BIOCHEM. BIOPHYS. RES. COMMUN. 1312 (1988)); STAT proteins (U.S. Patent Nos. 6,030,808; 6,030,780; Darnell et al., 277 SCIENCE 1630-1635 (1997)); Tumor Necrosis Factor Family (Cosman, 7 BLOOD CELL (1996); Gruss et al., 85 BLOOD 3378 (1995); Beutler et al., 7 ANNU. REV. IMMUNOL. 625 (1989); Aggarwal et al., 260 J. BIOL. CHEM. 2345 (1985); Pennica et al., 312 NATURE 724 (1984)).

Also of interest regarding cytokines are proteins or chemical moieties that interact with cytokines, such as Matrix Metalloproteinases (MMPs) (U.S. Patent No. 6,307,089; NAGASE, MATRIX METALLOPROTEINASES IN ZINC METALLOPROTEASES IN HEALTH AND DISEASE (1996)), and Nitric Oxide Synthases (NOS) (Fukuto, 34 ADV. PHARM 1 (1995); U.S. Patent No. 5,268,465).

A further embodiment of the present invention applies the methodologies described herein to the characterization of the pharmacological effects of blood proteins. The term "blood protein" is a generic term for a vast group of proteins generally circulating in blood plasma, and important for regulating coagulation and clot dissolution. See, e.g., Haematologic Technologies, Inc., HTI CATALOG, available at www.haemtech.com. Table 3 introduces, in a non-limiting fashion, some of the blood proteins contemplated by the present invention.

Table 3: Blood Proteins

| Protein | Principle Activity | Reference |
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| Factor V | In coagulation, this glycoprotein pro-cofactor, is converted to active cofactor, factor Va, via the serine protease α -thrombin, and less efficiently by its serine protease cofactor Xa. The prothrombinase complex rapidly converts zymogen prothrombin to the active serine protease, α -thrombin. Down regulation of prothrombinase complex occurs via inactivation of Va by activated protein C. | Mann et al., 57 ANN. REV. BIOCHEM. 915 (1988); <i>see also</i> Nesheim et al., 254 J. BIOL. CHEM. 508 (1979); Tracy et al., 60 BLOOD 59 (1982); Nesheim et al., 80 METHODS ENZYMOL. 249 (1981); Jenny et al., 84 PROC. NATL. ACAD. SCI. USA 4846 (1987). |
| Factor VII | Single chain glycoprotein zymogen in its native form. Proteolytic activation yields enzyme factor VIIa, which binds to integral membrane protein tissue factor, forming an enzyme complex that proteolytically converts factor X to Xa. Also known as extrinsic factor Xase complex. Conversion of VII to VIIa catalyzed by a number of proteases including thrombin, factors IXa, Xa, XIa, and XIIa. Rapid activation also occurs when VII combines with tissue factor in the presence of Ca, likely initiated by a small amount of pre-existing VIIa. Not readily inhibited by antithrombin III/heparin alone, but is inhibited when tissue factor added. | <i>See generally</i> , Broze et al., 80 METHODS ENZYMOL. 228 (1981); Bajaj et al., 256 J. BIOL. CHEM. 253 (1981); Williams et al., 264 J. BIOL. CHEM. 7536 (1989); Kisiel et al., 22 THROMBOSIS RES. 375 (1981); Seligsohn et al., 64 J. CLIN. INVEST. 1056 (1979); Lawson et al., 268 J. BIOL. CHEM. 767 (1993). |
| Factor IX | Zymogen factor IX, a single chain vitamin K-dependent glycoprotein, made in liver. Binds to negatively charged phospholipid surfaces. Activated by factor XIa or the factor VIIa/tissue factor/phospholipid complex. Cleavage at one site yields the intermediate IX α , subsequently converted to fully active form IXa β by cleavage at another site. Factor IXa β is the catalytic component of the "intrinsic factor Xase complex" (factor VIIIa/IXa/Ca ²⁺ /phospholipid) that proteolytically activates factor X to factor Xa. | Thompson, 67 BLOOD, 565 (1986); Hedner et al., HEMOSTASIS AND THROMBOSIS 39-47 (R.W. Colman, J. Hirsh, V.J. Marder, E.W. Salzman ed., 2 nd ed. J.P. Lippincott Co., Philadelphia) 1987; Fujikawa et al., 45 METHODS IN ENZYMOLOGY 74 (1974). |
| Factor X | Vitamin K-dependent protein zymogen, made in liver, circulates in plasma as a two chain molecule linked by a disulfide bond. Factor Xa (activated X) serves as the enzyme component of prothrombinase complex, responsible for rapid conversion of prothrombin to thrombin. | <i>See</i> Davie et al., 48 ADV. ENZYMOL. 277 (1979); Jackson, 49 ANN. REV. BIOCHEM. 765 (1980); <i>see also</i> Fujikawa et al., 11 BIOCHEM. 4882 (1972); Discipio et al., 16 BIOCHEM. 698 (1977); Discipio et al., 18 BIOCHEM. 899 (1979); Jackson et al., 7 BIOCHEM. 4506 (1968); McMullen et |

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| | | al., 22 BIOCHEM. 2875 (1983). |
| Factor XI | Liver-made glycoprotein homodimer circulates, in a non-covalent complex with high molecular weight kininogen, as a zymogen, requiring proteolytic activation to acquire serine protease activity. Conversion of factor XI to factor XIa is catalyzed by factor XIIa. XIa unique among the serine proteases, since it contains two active sites per molecule. Works in the intrinsic coagulation pathway by catalyzing conversion of factor IX to factor IXa. Complex form, factor XIa/HMWK, activates factor XII to factor XIIa and prekallikrein to kallikrein. Major inhibitor of XIa is α_1 -antitrypsin and to lesser extent, antithrombin-III. Lack of factor XI procoagulant activity causes bleeding disorder: plasma thromboplastin antecedent deficiency. | Thompson et al., 60 J. CLIN. INVEST. 1376 (1977); Kurachi et al., 16 BIOCHEM. 5831 (1977); Bouma et al., 252 J. BIOL. CHEM. 6432 (1977); Wuepper, 31 FED. PROC. 624 (1972); Saito et al., 50 BLOOD 377 (1977); Fujikawa et al., 25 BIOCHEM. 2417 (1986); Kurachi et al., 19 BIOCHEM. 1330 (1980); Scott et al., 69 J. CLIN. INVEST. 844 (1982). |
| Factor XII (Hageman Factor) | Glycoprotein zymogen. Reciprocal activation of XII to active serine protease factor XIIa by kallikrein is central to start of intrinsic coagulation pathway. Surface bound α -XIIa activates factor XI to XIa. Secondary cleavage of α -XIIa by kallikrein yields β -XIIa, and catalyzes solution phase activation of kallikrein, factor VII and the classical complement cascade. | Schmaier et al., 18-38, and Davie, 242-267 HEMOSTASIS & THROMBOSIS (Colman et al., eds., J.B. Lippincott Co., Philadelphia, 1987). |
| Factor XIII | Zymogenic form of glutamyl-peptide γ -glutamyl transferase factor XIIIa (fibrinolyase, plasma transglutaminase, fibrin stabilizing factor). Made in the liver, found extracellularly in plasma and intracellularly in platelets, megakaryocytes, monocytes, placenta, uterus, liver and prostrate tissues. Circulates as a tetramer of 2 pairs of nonidentical subunits (A_2B_2). Full expression of activity is achieved only after the Ca^{2+} - and fibrin(ogen)-dependent dissociation of B subunit dimer from A_2' dimer. Last of the zymogens to become activated in the coagulation cascade, the only enzyme in this system that is not a serine protease. XIIIa stabilizes the fibrin clot by crosslinking the α and γ -chains of fibrin. Serves in cell proliferation in wound healing, tissue remodeling, atherosclerosis, and tumor growth. | See McDonough, 340-357 HEMOSTASIS & THROMBOSIS (Colman et al., eds., J.B. Lippincott Co., Philadelphia, 1987); Folk et al., 113 METHODS ENZYMOL. 364 (1985); Greenberg et al., 69 BLOOD 867 (1987). Other proteins known to be substrates for Factor XIIIa, that may be hemostatically important, include fibronectin (Iwanaga et al., 312 ANN. NY ACAD. SCI. 56 (1978)), a_2 -antiplasmin (Sakata et al., 65 J. CLIN. INVEST. 290 (1980)), collagen (Mosher et al., 64 J. CLIN. INVEST. 781 (1979)), factor V (Francis et al., 261 J. BIOL. CHEM. 9787 (1986)), von Willebrand Factor (Mosher et al., 64 J. CLIN. INVEST. 781 (1979)) and thrombospondin (Bale et al., 260 J. BIOL. CHEM. 7502 (1985); Bohn, 20 MOL. CELL BIOCHEM. 67 (1978)). |

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| Fibrinogen | <p>Plasma fibrinogen, a large glycoprotein, disulfide linked dimer made of 3 pairs of non-identical chains (Aa, Bb and g), made in liver. Aa has N-terminal peptide (fibrinopeptide A (FPA), factor XIIIa crosslinking sites, and 2 phosphorylation sites. Bb has fibrinopeptide B (FPB), 1 of 3 N-linked carbohydrate moieties, and an N-terminal pyroglutamic acid. The g chain contains the other N-linked glycos. site, and factor XIIIa cross-linking sites. Two elongated subunits ((AaBbg)₂) align in an antiparallel way forming a trinodular arrangement of the 6 chains. Nodes formed by disulfide rings between the 3 parallel chains. Central node (n-disulfide knot, E domain) formed by N-termini of all 6 chains held together by 11 disulfide bonds, contains the 2 IIa-sensitive sites. Release of FPA by cleavage generates Fbn I, exposing a polymerization site on Aa chain. These sites bind to regions on the D domain of Fbn to form proto-fibrils. Subsequent IIa cleavage of FPB from the Bb chain exposes additional polymerization sites, promoting lateral growth of Fbn network. Each of the 2 domains between the central node and the C-terminal nodes (domains D and E) has parallel α-helical regions of the Aa, Bb and g chains having protease-(plasmin-) sensitive sites. Another major plasmin sensitive site is in hydrophilic preturbance of α-chain from C-terminal node. Controlled plasmin degradation converts Fbg into fragments D and E.</p> | <p>FURLAN, <i>Fibrinogen</i>, IN HUMAN PROTEIN DATA, (Haeberli, ed., VCH Publishers, N.Y., 1995); Doolittle, in HAEMOSTASIS & THROMBOSIS, 491-513 (3rd ed., Bloom et al., eds., Churchill Livingstone, 1994); HANTGAN, et al., in HAEMOSTASIS & THROMBOSIS 269-89 (2d ed., Forbes et al., eds., Churchill Livingstone, 1991).</p> |
| Fibronectin | <p>High molecular weight, adhesive, glycoprotein found in plasma and extracellular matrix in slightly different forms. Two peptide chains interconnected by 2 disulfide bonds, has 3 different types of repeating homologous sequence units. Mediates cell attachment by interacting with cell surface receptors and extracellular matrix components. Contains an Arg-Gly-Asp-Ser (RGDS) cell attachment-promoting sequence, recognized by specific cell receptors, such as those on platelets. Fibrin-fibronectin complexes stabilized by factor XIIIa-catalyzed covalent cross-linking of fibronectin to</p> | <p>Skorstengaard et al., 161 Eur. J. BIOCHEM. 441 (1986); Kornblihtt et al., 4 EMBO J. 1755 (1985); Odermatt et al., 82 PNAS 6571 (1985); Hynes, R.O., ANN. REV. CELL BIOL., 1, 67 (1985); Mosher 35 ANN. REV. MED. 561 (1984); Rouslahti et al., 44 Cell 517 (1986); Hynes 48 CELL 549 (1987); Mosher 250 BIOL. CHEM. 6614 (1975).</p> |

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| | the fibrin a chain. | |
| β_2 -Glycoprotein I | Also called β_2 I and Apolipoprotein H. Highly glycosylated single chain protein made in liver. Five repeating mutually homologous domains consisting of approximately 60 amino acids disulfide bonded to form Short Consensus Repeats (SCR) or Sushi domains. Associated with lipoproteins, binds anionic surfaces like anionic vesicles, platelets, DNA, mitochondria, and heparin. Binding can inhibit contact activation pathway in blood coagulation. Binding to activated platelets inhibits platelet associated prothrombinase and adenylate cyclase activities. Complexes between β_2 I and cardiolipin have been implicated in the anti-phospholipid related immune disorders LAC and SLE. | See, e.g., Lozier et al., 81 PNAS 2640-44 (1984); Kato & Enjyoi 30 BIOCHEM. 11687-94 (1997); Wurm, 16 INT'L J. BIOCHEM. 511-15 (1984); Bendixen et al., 31 BIOCHEM. 3611-17 (1992); Steinkasserer et al., 277 BIOCHEM. J. 387-91 (1991); Nimpf et al., 884 BIOCHEM. BIOPHYS. ACTA 142-49 (1986); Kroll et al. 434 BIOCHEM. BIOPHYS. Acta 490-501 (1986); Polz et al., 11 INT'L J. BIOCHEM. 265-73 (1976); McNeil et al., 87 PNAS 4120-24 (1990); Galli et al., I LANCET 1544-47 (1990); Matsuura et al., II LANCET 177-78 (1990); Pengo et al., 73 THROMBOSIS & HAEMOSTASIS 29-34 (1995). |
| Osteonectin | Acidic, noncollagenous glycoprotein (Mr=29,000) originally isolated from fetal and adult bovine bone matrix. May regulate bone metabolism by binding hydroxyapatite to collagen. Identical to human placental SPARC. An alpha granule component of human platelets secreted during activation. A small portion of secreted osteonectin expressed on the platelet cell surface in an activation-dependent manner | Villarreal et al., 28 BIOCHEM. 6483 (1989); Tracy et al., 29 INT'L J. BIOCHEM. 653 (1988); Romberg et al., 25 BIOCHEM. 1176 (1986); Sage & Bornstein 266 J. BIOL. CHEM. 14831 (1991); Kelm & Mann 4 J. BONE MIN. RES. 5245 (1989); Kelm et al., 80 BLOOD 3112 (1992). |
| Plasminogen | Single chain glycoprotein zymogen with 24 disulfide bridges, no free sulfhydryls, and 5 regions of internal sequence homology, "kringles", each five triple-looped, three disulfide bridged, and homologous to kringle domains in t-PA, u-PA and prothrombin. Interaction of plasminogen with fibrin and α 2-antiplasmin is mediated by lysine binding sites. Conversion of plasminogen to plasmin occurs by variety of mechanisms, including urinary type and tissue type plasminogen activators, streptokinase, staphylokinase, kallikrein, factors IXa and XIIa, but all result in hydrolysis at Arg560-Val561, yielding two chains that remain covalently associated by a disulfide bond. | See Robbins, 45 METHODS IN ENZYMOLOGY 257 (1976); COLLEN, 243-258 BLOOD COAG. (Zwaal et al., eds., New York, Elsevier, 1986); see also Castellino et al., 80 METHODS IN ENZYMOLOGY 365 (1981); Wohl et al., 27 THROMB. RES. 523 (1982); Barlow et al., 23 BIOCHEM. 2384 (1984); SOTTRUP-JENSEN ET AL., 3 PROGRESS IN CHEM. FIBRINOLYSIS & THROMBOLYSIS 197-228 (Davidson et al., eds., Raven Press, New York 1975). |
| tissue Plasminogen Activator | t-PA, a serine endopeptidase synthesized by endothelial cells, is the major physiologic activator of plasminogen in clots, catalyzing conversion of | See Plasminogen. |

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| | plasminogen to plasmin by hydrolising a specific arginine-alanine bond. Requires fibrin for this activity, unlike the kidney-produced version, urokinase-PA. | |
| Plasmin | <i>See Plasminogen.</i> Plasmin, a serine protease, cleaves fibrin, and activates and/or degrades compounds of coagulation, kinin generation, and complement systems. Inhibited by a number of plasma protease inhibitors <i>in vitro</i> . Regulation of plasmin <i>in vivo</i> occurs mainly through interaction with α_2 -antiplasmin, and to a lesser extent, α_2 -macroglobulin. | <i>See Plasminogen.</i> |
| Platelet Factor-4 | Low molecular weight, heparin-binding protein secreted from agonist-activated platelets as a homotetramer in complex with a high molecular weight, proteoglycan, carrier protein. Lysine-rich, COOH-terminal region interacts with cell surface expressed heparin-like glycosaminoglycans on endothelial cells, PF-4 neutralizes anticoagulant activity of heparin exerts procoagulant effect, and stimulates release of histamine from basophils. Chemotactic activity toward neutrophils and monocytes. Binding sites on the platelet surface have been identified and may be important for platelet aggregation. | Rucinski et al., 53 BLOOD 47 (1979); Kaplan et al., 53 BLOOD 604 (1979); George 76 BLOOD 859 (1990); Busch et al., 19 THROMB. RES. 129 (1980); Rao et al., 61 BLOOD 1208 (1983); Brindley, et al., 72 J. CLIN. INVEST. 1218 (1983); Deuel et al., 74 PNAS 2256 (1981); Osterman et al., 107 BIOCHEM. BIOPHYS. RES. COMMUN. 130 (1982); Capitanio et al., 839 BIOCHEM. BIOPHYS. ACTA 161 (1985). |
| Protein C | Vitamin K-dependent zymogen, protein C, made in liver as a single chain polypeptide then converted to a disulfide linked heterodimer. Cleaving the heavy chain of human protein C converts the zymogen into the serine protease, activated protein C. Cleavage catalyzed by a complex of α -thrombin and thrombomodulin. Unlike other vitamin K dependent coagulation factors, activated protein C is an anticoagulant that catalyzes the proteolytic inactivation of factors Va and VIIIa, and contributes to the fibrinolytic response by complex formation with plasminogen activator inhibitors. | <i>See Esmon</i> , 10 PROGRESS IN THROMB. & HEMOSTAS. 25 (1984); Stenflo, 10 SEMIN. IN THROMB. & HEMOSTAS. 109 (1984); Griffen et al., 60 BLOOD 261 (1982); Kiesel et al., 80 METHODS ENZYMOL. 320 (1981); Discipio et al., 18 BIOCHEM. 899 (1979). |
| Protein S | Single chain vitamin K-dependent protein functions in coagulation and complement cascades. Does not possess the catalytic triad. Complexes to C4b binding protein (C4BP) and to negatively charged phospholipids, concentrating C4BP at cell surfaces | Walker, 10 SEMIN. THROMB. HEMOSTAS. 131 (1984); Dahlback et al., 10 SEMIN. THROMB. HEMOSTAS., 139 (1984); Walker 261 J. BIOL. CHEM. 10941 (1986). |

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| | following injury. Unbound S serves as anticoagulant cofactor protein with activated Protein C. A single cleavage by thrombin abolishes protein S cofactor activity by removing gla domain. | |
| Protein Z | Vitamin K-dependent, single-chain protein made in the liver. Direct requirement for the binding of thrombin to endothelial phospholipids. Domain structure similar to that of other vitamin K-dependant zymogens like factors VII, IX, X, and protein C. N-terminal region contains carboxylglutamic acid domain enabling phospholipid membrane binding. C-terminal region lacks "typical" serine protease activation site. Cofactor for inhibition of coagulation factor Xa by serpin called protein Z-dependant protease inhibitor. Patients diagnosed with protein Z deficiency have abnormal bleeding diathesis during and after surgical events. | Sejima et al., 171 BIOCHEM. BIOPHYSICS RES. COMM. 661 (1990); Hogg et al., 266 J. BIOL. CHEM. 10953 (1991); Hogg et al., 17 BIOCHEM. BIOPHYSICS RES. COMM. 801 (1991); Han et al., 38 BIOCHEM. 11073 (1999); Kemkes-Matthes et al., 79 THROMB. RES. 49 (1995). |
| Prothrombin | Vitamin K-dependent, single-chain protein made in the liver. Binds to negatively charged phospholipid membranes. Contains two "kringle" structures. Mature protein circulates in plasma as a zymogen and, during coagulation, is proteolytically activated to the potent serine protease α -thrombin. | Mann et al., 45 METHODS IN ENZYMOLOGY 156 (1976); Magnusson et al., PROTEASES IN BIOLOGICAL CONTROL 123-149 (Reich et al., eds. Cold Spring Harbor Labs., New York 1975); Discipio et al., 18 BIOCHEM. 899 (1979). |
| α -Thrombin | See Prothrombin. During coagulation, thrombin cleaves fibrinogen to form fibrin, the terminal proteolytic step in coagulation, forming the fibrin clot. Thrombin also responsible for feedback activation of procofactors V and VIII. Activates factor XIII and platelets; functions as vasoconstrictor protein. Procoagulant activity arrested by heparin cofactor II or the antithrombin III/heparin complex, or complex formation with thrombomodulin. Formation of thrombin/thrombomodulin complex results in inability of thrombin to cleave fibrinogen and activate factors V and VIII, but increases the efficiency of thrombin for activation of the anticoagulant, protein C. | 45 METHODS ENZYMOL. 156 (1976). |
| β -Thromboglobulin | Low molecular weight, heparin-binding, platelet-derived tetramer protein, consisting of four identical peptide chains. Lower affinity for heparin than PF-4. Chemotactic activity for human | See, e.g., George 76 BLOOD 859 (1990); Holt & Niewiarowski 632 BIOCHIM. BIOPHYS. ACTA 284 (1980); Niewiarowski et al., 55 BLOOD 453 (1980); Varma et al., 701 BIOCHIM. |

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| | fibroblasts, other functions unknown. | BIOPHYS. ACTA 7 (1982); Senior et al., 96 J. CELL. BIOL. 382 (1983). |
| Thrombopoietin | Human TPO (Thrombopoietin, Mpl-ligand, MGDF) stimulates the proliferation and maturation of megakaryocytes and promotes increased circulating levels of platelets <i>in vivo</i> . Binds to c-Mpl receptor. | Horikawa et al., 90(10) BLOOD 4031-38 (1997); de Sauvage et al., 369 NATURE 533-58 (1995). |
| Thrombospondin | High-molecular weight, heparin-binding glycoprotein constituent of platelets, consisting of three, identical, disulfide-linked polypeptide chains. Binds to surface of resting and activated platelets, may effect platelet adherence and aggregation. An integral component of basement membrane in different tissues. Interacts with a variety of extracellular macromolecules including heparin, collagen, fibrinogen and fibronectin, plasminogen, plasminogen activator, and osteonectin. May modulate cell-matrix interactions. | Dawes et al., 29 THROMB. RES. 569 (1983); Switalska et al., 106 J. LAB. CLIN. MED. 690 (1985); Lawler et al., 260 J. BIOL. CHEM. 3762 (1985); Wolff et al., 261 J. BIOL. CHEM. 6840 (1986); Asch et al., 79 J. CLIN. CHEM. 1054 (1987); Jaffe et al., 295 NATURE 246 (1982); Wright et al., 33 J. HISTOCHEM. CYTOCHEM. 295 (1985); Dixit et al., 259 J. BIOL. CHEM. 10100 (1984); Mumby et al., 98 J. CELL. BIOL. 646 (1984); Lahav et al., 145 EUR. J. BIOCHEM. 151 (1984); Silverstein et al., 260 J. BIOL. CHEM. 10346 (1985); Clezardin et al. 175 EUR. J. BIOCHEM. 275 (1988); Sage & Bornstein (1991). |
| Von Willebrand Factor | Multimeric plasma glycoprotein made of identical subunits held together by disulfide bonds. During normal hemostasis, larger multimers of vWF cause platelet plug formation by forming a bridge between platelet glycoprotein IB and exposed collagen in the subendothelium. Also binds and transports factor VIII (antihemophilic factor) in plasma. | Hoyer 58 BLOOD 1 (1981); Ruggeri & Zimmerman 65 J. CLIN. INVEST. 1318 (1980); Hoyer & Shainoff 55 BLOOD 1056 (1980); Meyer et al., 95 J. LAB. CLIN. INVEST. 590 (1980); Santoro 21 THROMB. RES. 689 (1981); Santoro, & Cowan 2 COLLAGEN RELAT. RES. 31 (1982); Morton et al., 32 THROMB. RES. 545 (1983); Tuddenham et al., 52 BRIT. J. HAEMATOL. 259 (1982). |

Additional blood proteins contemplated herein include the following human serum proteins, which may also be placed in another category of protein (such as hormone or antigen): Actin, Actinin, Amyloid Serum P, Apolipoprotein E, B2-Microglobulin, C-
5 Reactive Protein (CRP), Cholesterylester transfer protein (CETP), Complement C3B, Ceruplasmin, Creatine Kinase, Cystatin, Cytokeratin 8, Cytokeratin 14, Cytokeratin 18, Cytokeratin 19, Cytokeratin 20, Desmin, Desmocollin 3, FAS (CD95), Fatty Acid Binding Protein, Ferritin, Filamin, Glial Filament Acidic Protein, Glycogen Phosphorylase Isoenzyme BB (GPBB), Haptoglobulin, Human Myoglobin, Myelin Basic Protein, Neurofilament,
10 Placental Lactogen, Human SHBG, Human Thyroid Peroxidase, Receptor Associated Protein, Human Cardiac Troponin C, Human Cardiac Troponin I, Human Cardiac Troponin T, Human Skeletal Troponin I, Human Skeletal Troponin T, Vimentin, Vinculin, Transferrin

Receptor, Prealbumin, Albumin, Alpha-1-Acid Glycoprotein, Alpha-1-Antichymotrypsin, Alpha-1-Antitrypsin, Alpha-Fetoprotein, Alpha-1-Microglobulin, Beta-2-microglobulin, C-Reactive Protein, Haptoglobin, Myoglobin, Prealbumin, PSA, Prostatic Acid

Phosphatase, Retinol Binding Protein, Thyroglobulin, Thyroid Microsomal Antigen,

- 5 Thyroxine Binding Globulin, Transferrin, Troponin I, Troponin T, Prostatic Acid Phosphatase, Retinol Binding Globulin (RBP). All of these proteins, and sources thereof, are known in the art. Many of these proteins are available commercially from, for example, Research Diagnostics, Inc. (Flanders, NJ).

- Another embodiment applies the methodologies of the present invention to the
- 10 analysis of the effects of a neurotransmitter or the receptor of a neurotransmitter on a patient or cell sample. Neurotransmitters are chemicals, some of them proteinaceous, made by neurons and used by them to transmit signals to the other neurons or non-neuronal cells (e.g., skeletal muscle, myocardium, pineal glandular cells) that they innervate. Neurotransmitters produce their effects by being released into synapses when their neuron of origin fires (i.e.,
- 15 becomes depolarized) and then attaching to receptors in the membrane of the post-synaptic cells. This causes changes in the fluxes of particular ions across that membrane, making cells more likely to become depolarized, if the neurotransmitter happens to be excitatory, or less likely if it is inhibitory. Neurotransmitters can also produce their effects by modulating the production of other signal-transducing molecules ("second messengers") in the post-synaptic
- 20 cells. *See generally* COOPER, BLOOM & ROTH, *THE BIOCHEM. BASIS OF NEUROPHARMACOLOGY* (7th Ed. Oxford Univ. Press, NYC, 1996); <http://web.indstate.edu/thcme/mwking/nerves>. Neurotransmitters contemplated in the present invention include, but are not limited to, Acetylcholine, Serotonin, γ -aminobutyrate (GABA), Glutamate, Aspartate, Glycine, Histamine, Epinephrine, Norepinephrine, Dopamine,
- 25 Adenosine, ATP, Nitric oxide, and any of the peptide neurotransmitters such as those derived from pre-opiomelanocortin (POMC), as well as antagonists and agonists of any of the foregoing.

Table 4 presents a non-limiting list and description of some pharmacologically active peptides which may be incorporated into the methods contemplated by the present invention.

30 Table 4: Pharmacologically active peptides

| Binding partner/ Protein of interest (form of peptide) | Pharmacological activity | Reference |
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| EPO receptor | EPO mimetic | Wrighton et al., 273 SCIENCE 458-63 |

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| (intrapeptide disulfide-bonded) | | (1996); U.S. Pat. No. 5,773,569, issued June 30, 1998. |
| EPO receptor (C-terminally cross-linked dimer) | EPO mimetic | Livnah et al., 273 SCIENCE 464-71 (1996); Wrighton et al., 15 NATURE BIOTECHNOLOGY 1261-5 (1997); Int'l Patent Application WO 96/40772, published Dec. 19, 1996. |
| EPO receptor (linear) | EPO mimetic | Naranda et al., 96 PNAS 7569-74 (1999). |
| c-Mpl (linear) | TPO-mimetic | Cwirla et al., 276 SCIENCE 1696-9 (1997); U.S. Pat. No. 5,869,451, issued Feb. 9, 1999; U.S. Pat. No. 5,932,946, issued Aug. 3, 1999. |
| c-Mpl (C-terminally cross-linked dimer) | TPO-mimetic | Cwirla et al., 276 SCIENCE 1696-9 (1997). |
| (disulfide-linked dimer) | stimulation of hematopoiesis ("G-CSF-mimetic") | Paukovits et al., 364 HOPPE-SEYLER'S Z. PHYSIOL. CHEM. 30311 (1984); Laerumgal., 16 EXP. HEMAT. 274-80 (1988). |
| (alkylene-linked dimer) | G-CSF-mimetic | Batnagar et al., 39 J. MED. CHEM. 38149 (1996); Cuthbertson et al., 40 J. MED. CHEM. 2876-82 (1997); King et al., 19 EXP. HEMATOL. 481 (1991); King et al., 86(Suppl. 1) BLOOD 309 (1995). |
| IL-1 receptor (linear) | inflammatory and autoimmune diseases ("IL-1 antagonist" or "IL-1 ra-mimetic") | U.S. Pat. No. 5,608,035; U.S. Pat. No. 5,786,331; U.S. Pat. No. 5,880,096; Yanofsky et al., 93 PNAS 7381-6 (1996); Akeson et al., 271 J. BIOL. CHEM. 30517-23 (1996); Wiekzorek et al., 49 POL. J. PHARMACOL. 107-17 (1997); Yanofsky, 93 PNAS 7381-7386 (1996). |
| Facteur thyrique (linear) | stimulation of lymphocytes (FTS-mimetic) | Inagaki-Ohara et al., 171 CELLULAR IMMUNOL. 30-40 (1996); Yoshida, 6 J. IMMUNOPHARMACOL 141-6 (1984). |
| CTLA4 MAb (intrapeptide di-sulfide bonded) | CTLA4-mimetic | Fukumoto et al., 16 NATURE BIOTECH. 267-70 (1998). |
| TNF- α receptor (exo-cyclic) | TNF- α antagonist | Takasaki et al., 15 NATURE BIOTECH. 1266-70 (1997); WO 98/53842, published December 3, 1998. |
| TNF- α receptor (linear) | TNF- α antagonist | Chirinos-Rojas, J. IMM., 5621-26. |
| C3b (intrapeptide di-sulfide bonded) | inhibition of complement activation; autoimmune diseases (C3b antagonist) | Sahu et al., 157 IMMUNOL. 884-91 (1996); Morikis et al., 7 PROTEIN SCI. 619-27 (1998). |
| vinculin (linear) | cell adhesion processes, cell growth, differentiation wound healing, tumor metastasis ("vinculin binding") | Adey et al., 324 BIOCHEM. J. 523-8 (1997). |
| C4 binding protein (C413P) (linear) | anti-thrombotic | Linse et al. 272 BIOL. CHEM. 14658-65 (1997). |

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| urokinase receptor (linear) | processes associated with urokinase interaction with its receptor (e.g. angiogenesis, tumor cell invasion and metastasis; (URK antagonist) | Goodson et al., 91 PNAS 7129-33 (1994); International patent application WO 97/35969, published October 2, 1997. |
| Mdm2, Hdm2 (linear) | Inhibition of inactivation of p53 mediated by Mdm2 or hdm2; anti-tumor ("Mdm/hdm antagonist") | Picksley et al., 9 ONCOGENE 2523-9 (1994); Bottger et al. 269 J. MOL. BIOL. 744-56 (1997); Bottger et al., 13 ONCOGENE 13: 2141-7 (1996). |
| p21 ^{WAF1} (linear) | anti-tumor by mimicking the activity of p21 ^{WAF1} | Ball et al., 7 CURR. BIOL. 71-80 (1997). |
| farnesyl transferase (linear) | anti-cancer by preventing activation of ras oncogene | Gibbs et al., 77 CELL 175-178 (1994). |
| Ras effector domain (linear) | anti-cancer by inhibiting biological function of the ras oncogene | Moodie et al., 10 TRENDS GENET. 44-48 (1994); Rodriguez et al., 370 NATURE 527-532 (1994). |
| SH2/SH3 domains (linear) | anti-cancer by inhibiting tumor growth with activated tyrosine kinases | Pawson et al, 3 CURR. BIOL. 434-432 (1993); Yu et al., 76 CELL 933-945 (1994). |
| p16 ^{INK4} (linear) | anti-cancer by mimicking activity of p16; e.g., inhibiting cyclin D-Cdk complex ("p16-mimetic") | Fahraeus et al., 6 CURR. BIOL. 84-91 (1996). |
| Src, Lyn (linear) | inhibition of Mast cell activation, IgE-related conditions, type I hypersensitivity ("Mast cell antagonist"). | Stauffer et al., 36 BIOCHEM. 9388-94 (1997). |
| Mast cell protease (linear) | treatment of inflammatory disorders mediated by release of tryptase-6 ("Mast cell protease inhibitors") | International patent application WO 98/33812, published August 6, 1998. |
| SH3 domains (linear) | treatment of SH3-mediated disease states ("SH3 antagonist") | Rickles et al., 13 EMBO J. 5598-5604 (1994); Sparks et al., 269 J. BIOL. CHEM. 238536 (1994); Sparks et al., 93 PNAS 1540-44 (1996). |
| HBV core antigen (HBcAg) (linear) | treatment of HBV viral antigen (HBcAg) infections ("anti-HBV") | Dyson & Muray, PNAS 2194-98 (1995). |
| selectins (linear) | neutrophil adhesion inflammatory diseases ("selectin antagonist") | Martens et al., 270 J. BIOL. CHEM. 21129-36 (1995); European Pat. App. EP 0 714 912, published June 5, 1996. |
| calmodulin (linear, cyclized) | calmodulin antagonist | Pierce et al., 1 MOLEC. DIVERSITY 25965 (1995); Dedman et al., 267 J. BIOL. CHEM. 23025-30 (1993); Adey & Kay, 169 GENE 133-34 (1996). |
| integrins (linear, cyclized) | tumor-homing; treatment for conditions related to integrin-mediated cellular | International patent applications WO 95/14714, published June 1, 1995; WO 97/08203, published March 6, 1997; WO |

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| | events, including platelet aggregation, thrombosis, wound healing, osteoporosis, tissue repair, angiogenesis (e.g., for treatment of cancer) and tumor invasion ("integrin-binding") | 98/10795, published March 19, 1998; WO 99/24462, published May 20, 1999; Kraft et al., 274 J. BIOL. CHEM. 1979-85 (1999). |
| fibronectin and extracellular matrix components of T-cells and macrophages (cyclic, linear) | treatment of inflammatory and autoimmune conditions | International patent application WO 98/09985, published March 12, 1998. |
| somatostatin and cortistatin (linear) | treatment or prevention of hormone-producing tumors, acromegaly, gigantism, dementia, gastric ulcer, tumor growth, inhibition of hormone secretion, modulation of sleep or neural activity | European patent application EP 0 911 393, published Apr. 28, 1999. |
| bacterial lipopoly-saccharide (linear) | antibiotic; septic shock; disorders modulatable by CAP37 | U.S. Pat. No. 5,877,151, issued March 2, 1999. |
| parclaxin, mellitin (linear or cyclic) | antipathogenic | International patent application WO 97/31019, published 28 August 1997. |
| VIP (linear, cyclic) | impotence, neuro-degenerative disorders | International patent application WO 97/40070, published October 30, 1997. |
| CTLs (linear) | cancer | European patent application EP 0 770 624, published May 2, 1997. |
| THF-gamma2 (linear) | | Burnstein, 27 BIOCHEM. 4066-71 (1988). |
| Amylin (linear) | | Cooper, 84 PNAS 8628-32 (1987). |
| Adreno-medullin (linear) | | Kitamura, 192 BBRC 553-60 (1993). |
| VEGF (cyclic, linear) | anti-angiogenic; cancer, rheumatoid arthritis, diabetic retinopathy, psoriasis ("VEGF antagonist") | Fairbrother, 37 BIOCHEM. 17754-64 (1998). |
| MMP (cyclic) | inflammation and autoimmune disorders; tumor growth ("MMP inhibitor") | Koivunen, 17 NATURE BIOTECH. 768-74 (1999). |
| HGH fragment (linear) | | U.S. Pat. No. 5,869,452, issued Feb. 9, 1999. |
| Echistatin | inhibition of platelet aggregation | Gan, 263 J. BIOL. 19827-32 (1988). |
| SLE autoantibody (linear) | SLE | International patent application WO 96/30057, published Oct. 3, 1996. |
| GD1 alpha | suppression of tumor metastasis | Ishikawa et al., 1 FEBS LETT. 20-4 (1998). |
| anti-phospholipid β -2 glycoprotein-1 (β 2GPI) | endothelial cell activation, anti-phospholipid syndrome (APS), thromboembolic | Blank Mal., 96 PNAS 5164-8 (1999). |

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| antibodies | phenomena, thrombocytopenia, and recurrent fetal loss | |
| T-Cell Receptor β chain (linear) | diabetes | International patent application WO 96/101214, published Apr. 18, 1996. |

IX. Database Creation, Database Access, And Business Methods

The business methods of the present application relate to the commercial and other uses of the methodologies of the present invention. In one aspect, the business methods include the marketing, sale, or licensing of the present methodologies in the context of providing consumers, *i.e.*, patients, medical practitioners, medical service providers, and pharmaceutical distributors and manufacturers, with the gene expression profiles, high information density gene expression profiles, and/or protein expression profiles provided by the present invention.

Furthermore, the present invention also relates to business methods in which gene expression profiles, high information density gene expression profiles, and/or protein expression profiles are used for analyzing test samples (*e.g.*, patient samples). In a specific embodiment, this method may be accomplished using the gene expression profile microarrays of the present invention. For example, a user (*e.g.*, a health practitioner such as a physician) may obtain a sample (*e.g.*, blood, tissue biopsy) from a patient. The sample may be prepared in-house, for example, using hospital facilities or the sample may be sent to a commercial laboratory facility. Briefly, RNA is extracted from the patient sample using methods that are well-known in the art. *See e.g.*, SAMBROOK ET AL. (1989). The RNA is, for example, then amplified by PCR, labeled with a fluorophore, and hybridized to a support representing a particular gene expression profile. The support is scanned for fluorescence and the results of the scan may be sent to a central gene expression profile database for analysis. In another embodiment, the sample itself is sent to a central laboratory facility for scanning analysis. The scanning results may be sent to the central laboratory facility for analysis via a computer terminal and through the Internet or other means. The connection between the user and the computer system is preferably secure.

In practice, the user may input, for example, information relating to the fluorescence scanning results of the support as well as additional information concerning the patient such as the patient's disease state, clinical chemistry (*e.g.*, red blood cell count, electrolytes), and other factors relating to the patient's disease state. The central computer system may then,

through the use of resident computer programs, provide an analysis of the patient's sample and generate a gene expression profile reflecting the patient's genetic profile.

Those skilled in the art will appreciate that the methods and apparatus of the present invention apply to any computer system, regardless of whether the computer system is a
5 complicated multi-user computing apparatus or a single user device such as a personal computer or workstation. A computer system suitably comprises a processor, main memory, a memory controller, an auxiliary storage interface, and a terminal interface, all of which are interconnected. Note that various modifications, additions, substitutions, or deletions may be made to the computer system within the scope of the present invention such as the addition of
10 cache memory or other peripheral devices.

The processor performs computation and control functions of the computer system, and comprises a suitable central processing unit (CPU). The processor may comprise a single integrated circuit, such as a microprocessor, or may comprise any suitable number of integrated circuit devices and/or circuit boards working in cooperation to accomplish the
15 functions of a processor. The processor suitably executes the algorithms (*e.g.*, MaxCor, Mean Log Ratio) of the present invention within its main memory.

The main memory of the computer systems of the present invention suitably contains one or more computer programs relating to the algorithms used to generate the gene expression profiles and an operating system. The term "computer program" is used in its
20 broadest sense, and includes any and all forms of computer programs, including source code, intermediate code, machine code, and any other representation of a computer program. The term "memory," as used herein, refers to any storage location in the virtual memory space of the system. It should be understood that portions of the computer program and operating system may be loaded into an instruction cache for the main processor to execute, while other
25 files may well be stored on magnetic or optical disk storage devices. In addition, it is to be understood that the main memory may comprise disparate memory locations.

The computer systems of the present invention may also comprise a memory controller, through use of a separate processor, which is responsible for moving requested information from the main memory and/or through the auxiliary storage interface to the main
30 processor. While for the purposes of explanation, the memory controller is described as a separate entity, those skilled in the art understand that, in practice, portions of the function provided by the memory controller may actually reside in the circuitry associated with the main processor, main memory, and/or the auxiliary storage interface.

In a preferred embodiment, the auxiliary storage interface allows the computer system to store and retrieve information from auxiliary storage devices, such as magnetic disks (*e.g.*, hard disks or floppy diskettes) or optical storage devices (*e.g.*, CD-ROM). One suitable storage device is a direct access storage device (DASD). A DASD may be a floppy disk drive, which may read programs and data from a floppy disk. It is important to note that while the present invention has been (and will continue to be) described in the context of a fully functional computer system, those skilled in the art will appreciate that the mechanisms of the present invention are capable of being distributed as a program product in a variety of forms, and that the present invention applies equally regardless of the particular type of signal bearing media to actually carry out the distribution. Examples of signal bearing media include: recordable type media such as floppy disks and CD ROMS, and transmission type media such as digital and analog communication links, including wireless communication links.

Furthermore, the computer systems of the present invention may comprise a terminal interface that allows system administrators and computer programmers to communicate with the computer system, normally through programmable workstations. It should be understood that the present invention applies equally to computer systems having multiple processors and multiple system buses. Similarly, although the system bus of the preferred embodiment is a typical hardwired, multidrop bus, any connection means that supports bidirectional communication in a computer-related environment could be used.

The gene expression profile database, high information density gene expression profile database, and/or protein expression profiles may be an internal database designed to include annotation information about the expression profiles generated by the methods of the present invention and through other sources and methods. Such information may include, for example, the databases in which a given nucleic acid or protein amino acid sequence was found, patient information associated with the expression profile, including age, cancer or tumor type or progression, descriptive information about related cDNA associated with the sequence, tissue or cell source, sequence data obtained from external sources, treatment information, diagnostic and prognostic information, information regarding gene expression and/or protein expression in response to various stimuli, expression profiles for a given gene, high information density gene, and/or protein and the related disease state or course of disease, for example whether the expression profile relates to or signifies a cancerous or pre-cancerous state, and preparation methods. The expression profiles may be based on protein

and/or nucleic acid microarray data obtained from publicly available or proprietary sources. The database may be divided into two sections: one for storing the sequences and related expression profiles and the other for storing the associated information. This database may be maintained as a private database with a firewall within the central computer facility.

- 5 However, this invention is not so limited and the expression profile databases may be made available to the public.

The database may be a network system connecting the network server with clients. The network may be any one of a number of conventional network systems, including a local area network (LAN) or a wide area network (WAN), as is known in the art (e.g., Ethernet).

- 10 The server may include software to access database information for processing user requests, and to provide an interface for serving information to client machines. The server may support the World Wide Web and maintain a website and Web browser for client use. Client/server environments, database servers, and networks are well documented in the technical, trade, and patent literature.

- 15 Through a Web browser, clients may construct search requests for retrieving data from a microarray database, a gene expression database, and/or protein expression database. For example, the user may "point and click" to user interface elements such as buttons, pull down menus, and scroll bars. The client requests may be transmitted to a Web application which formats them to produce a query that may be used to gather information from the
- 20 system database, based, for example, on microarray or expression data obtained by the client, and/or other phenotypic or genotypic information. For example, the client may submit expression data based on microarray expression profiles obtained from a patient and use the system of the present invention to obtain a diagnosis based on a comparison by the system of the client expression data with the expression data contained in the database. By way of
- 25 example, the system compares the expression profiles submitted by the client with expression profiles contained in the database and then provides the client with diagnostic information based on the best match of the client expression profiles with the database profiles. In addition, the website may provide hypertext links to public databases such as GenBank and associated databases maintained by the National Center for Biotechnology Information
- 30 (NCBI), part of the National Library of Medicine as well as any links providing relevant information for gene expression analysis, protein expression analysis, genetic disorders, scientific literature, and the like. Information including, but not limited to, identifiers, identifier types, biomolecular sequences, common cluster identifiers (GenBank, Unigene,

Incyte template identifiers, and so forth) and species names associated with each gene, is contemplated.

The present invention also provides a system for accessing bioinformation, including gene expression profiles, high information density gene expression profiles, protein
5 expression profiles, and annotative information, which is useful in the context of the methods of the present invention. The present invention contemplates, in one embodiment, the use of a Graphical User Interface ("GUI") for the access of gene expression profile information stored in a database. In a preferred embodiment, the GUI may be composed of two frames. A first frame may contain a selectable list of databases accessible by the user. When a
10 database is selected in the first frame, a second frame may display information resulting from the pair-wise comparison of the expression profile database with the client-supplied expression profile as described above, along with any other phenotypic or genotypic information.

The second frame of the GUI may contain a listing of biomolecular sequence
15 expression information and profiles contained in the selected database. Furthermore, the second frame may allow the user to select a subset, including all of the biomolecular sequences, and to perform an operation on the list of biomolecular sequences. In a preferred embodiment, the user may select the subset of biomolecular sequences by selecting a selection box associated with each biomolecular sequence. In a preferred embodiment, the
20 operations that may be performed include, but are not limited to, downloading all listed biomolecular sequences to a database spreadsheet with classification information, saving the selected subset of biomolecular sequences to a user file, downloading all listed biomolecular sequences to a database spreadsheet without classification information, and displaying classification information on a selected subset of biomolecular sequences.

25 If the user chooses to display classification information on a selected subset of biomolecular sequences, a second GUI may be presented to the user. In one embodiment, the second GUI may contain a listing of one or more external databases used to create the high information density gene expression profile databases as described above. Furthermore, for each external database, the GUI may display a list of one or more fields associated with each
30 external database. In another embodiment, the GUI may allow the user to select or deselect each of the one or more fields displayed in the second GUI. In yet another embodiment, the GUI may allow the user to select or deselect each of the one or more external databases.

In another embodiment, the business methods of the present invention include establishing a distribution system for distributing diagnostic of the present invention for sale, and may optionally include establishing a sales group for marketing the diagnostics. Yet another aspect of the present invention provides a method of conducting a target discovery business comprising identifying, by one or more of the above drug discovery methods, a test compound, as described above, which modulates the level of expression of a gene, a high information density gene, the activity of the gene product, or the activity of the high information density gene product; and optionally conducting therapeutic profiling of compounds identified, or further analogs thereof, for efficacy and toxicity in animals; and optionally licensing or selling, the rights for further drug development of said identified compounds.

Another embodiment of the present invention comprises a variety of business methods including methods for screening drug and toxicity effects on tissue or cell samples. A further aspect of the present invention comprises business methods for providing gene expression profiles, high information density gene expression profiles, and/or protein expression profiles for normal and diseased tissues. Also within the scope of this invention are business methods providing diagnostics and predictors for patient samples.

A further aspect of the present invention comprises business methods for the manufacturing and use of gene microarrays, high information density gene microarrays, and protein microarrays. The business methods further relate to providing information generated by using gene microarrays, gene expression profiles, high information density genes, high information density gene microarrays, high information density gene expression profiles, protein microarrays and protein expression microarrays.

The present invention also provides a business method for determining whether a patient has a disease or disorder associated with the overexpression and/or upregulation of a gene, or a pre-disposition to such a disease or disorder. This method comprises the steps of receiving information related to a gene or protein (*e.g.*, sequence information and/or information related thereto), receiving phenotypic and/or genotypic information associated with the patient, and acquiring information from the databases of the present invention related to the gene or protein and/or related to such a gene- or protein-associated disease or disorder, such as cancer and specifically colon cancer. Based on one or more of the phenotypic and/or genotypic information, the gene or protein information, and the acquired information, this method may further comprise the step of determining whether the subject has a disease or

disorder associated with a gene or protein, and specifically a gene or protein of the present invention, or a pre-disposition to such a gene-or protein-associated disease or disorder. The method may also comprise the step of recommending a particular treatment for the disease, disorder or pre-disease condition. Similarly, the present invention contemplates business methods as described above using, for example, high information density genes or proteins.

In one embodiment, the present invention contemplates a business method for determining whether a patient has a cellular proliferation, growth, differentiation, and/or migration disorder or a pre-disposition to a cellular proliferation, growth, differentiation, and/or migration disorder and specifically a cancerous or pre-cancerous state. This method comprises the steps of receiving information related to, *e.g.*, sequence information of a gene or protein of the present invention and/or information related thereto, receiving phenotypic information associated with the patient, acquiring information from the network related to, *e.g.*, sequence information of a gene or protein and/or information related thereto, and/or related to a cellular proliferation, growth, differentiation, and/or migration disorder and specifically a cancerous or pre-cancerous state. Based on one or more of the phenotypic and/or genotypic information, the sequence information and/or information related thereto, and the acquired information this method may further comprise the step of determining whether the patient has a cellular proliferation, growth, differentiation, and/or migration disorder or a pre-disposition to a cellular proliferation, growth, differentiation, and/or migration disorder and specifically a cancerous or pre-cancerous state. The method may also comprise the step of recommending a particular treatment for the disease, disorder or pre-disease condition. Similarly, the present invention contemplates business methods as described above using, for example, high information density genes or proteins.

Without further elaboration, it is believed that one skilled in the art, using the preceding description, can utilize the present invention to the fullest extent. The following examples are illustrative only, and not limiting of the remainder of the disclosure in any way whatsoever.

EXAMPLES

Example 1: Cell-Specific Gene Expression Analysis

By integrating laser capture microdissection, RNA amplification, and cDNA microarray technology, diverse cell types obtained *in situ* may be successfully screened and subsequently identified by differential gene expression. To demonstrate this integration of

technologies, the differential gene expressions of large and small-sized neurons in the dorsal root ganglia (DRG) were examined. In general, large DRG are myelinated, fast-conducting neurons that transmit mechanosensory information, and small DRG neurons are unmyelinated, slow-conducting, and transmit nociceptive information.

5 As shown in Figure 1, large (diameter $>40\mu\text{m}$) and small (diameter $<25\mu\text{m}$) neurons were cleanly and individually captured via LCM from $10\mu\text{m}$ sections of Nissl-stained rat DRGs. For this study, two sets of 1000 large neurons and 3 sets of 1000 small neurons were captured for cDNA microarray analysis.

RNA was extracted from each set of neurons and linearly amplified an estimated 10^6 -
10 fold via T7 RNA polymerase. Once amplified, three fluorescently labeled probes were synthesized from an individually amplified RNA (aRNA) and hybridized in triplicate to a microarray (or "chip") containing 477 cDNAs and 30 cDNAs encoding plant genes (for determination of non-specific nucleic acid hybridization). Expression in each neuronal set (designated as S1, S2, and S3 for small DRG neurons and L1 and L2 for large DRG neurons)
15 was monitored in triplicate, requiring a total of 15 microarrays. The quality of the microarray data is demonstrated in Figure 2a, which shows pseudocolor arrays, one resulting from hybridization to probes derived from neuronal set S1 and the other from neuronal set L2. The enlarged section of the chip displays some differences in fluorescence intensity (*i.e.*, expression levels) for particular cDNAs and demonstrates that regions containing different
20 cDNAs are relatively uniform in size and that the background between these regions is relatively low.

To determine whether a signal corresponding to a particular cDNA is reproducible between different chips, for each neuronal set, the coefficient of variation (CV) was calculated. From these values, the overall average CV for all 477 cDNAs per neuronal set
25 was calculated to be: S1 = 15.81%, S2 = 16.93%, S3 = 17.75%, L1 = 20.17 %, and L2 = 19.55%.

Independent amplifications ($\sim 10^6$ -fold) of different sets of the same neuronal subtype yielded quite similar expression patterns. For example, the correlation of signal intensities between S1 vs. S2 was $R^2 = 0.9688$, and between S1 vs. S3 was $R^2 = 0.9399$ (Figure 2b).
30 Similar results were obtained between the two sets of large neurons: $R^2 = 0.929$ for L1 vs. L2 (Figure 2b). Conversely, a comparison between all three small neuronal sets (S1, S2, and S3) versus the two large sets (L1 and L2) yielded a much lower correlation ($R^2 = 0.6789$),

demonstrating as expected that a subgroup of genes are differentially expressed in each of the two neuronal subtypes (Figure 2b).

To identify the mRNAs that are differentially expressed in large and small DRG neurons, the 477 cDNAs were examined and those with 1.5-fold or greater differences (at $P < 0.05$) were sequenced. Twenty-seven mRNAs appeared to be preferentially expressed in small DRG neurons and 14 mRNAs were preferentially expressed in large DRG (Figure 3 and Figure 4). To confirm the observed differential gene expression, *in situ* hybridization was performed with a subgroup of these cDNAs.

For the small neurons, five mRNAs were examined that encoded the following: fatty acid binding protein, sodium voltage-gated channel (NaV), phospholipase C delta-4, CGRP, and annexin V. For the large DRG neurons, three mRNAs were examined: neurofilament NF-L, neurofilament NF-H, and the beta-1 subunit of voltage-gated sodium channels. Based on quantitative measurements comparing the overall intensity of signal in small and large neurons and the percentage of cells labeled within the total population of either small or large neurons, the preferential expression of these mRNAs was demonstrated in large and small DRG neurons (Figure 5 and Figure 6).

Although this study identified preferentially expressed mRNAs within large and small DRG neurons, there is a great deal more heterogeneity within DRG neurons beyond simply small and large. For example, small DRG neurons are unmyelinated, slow-conducting, and transmit nociceptive information; whereas large DRG are myelinated, fast-conducting neurons that transmit mechanosensory information. These structural and functional differences would presumably be reflected in a heterogeneous gene expression. To address this more complicated genetic heterogeneity, immunocytochemistry may be coupled with LCM followed by RNA amplification and cDNA chip analysis as a means to further differentiate cell types within large and small DRG. In addition, chips containing a larger number of cDNAs (*i.e.*, >10,000) can be constructed to more accurately identify the differential gene expression between large and small neurons.

The results shown herein demonstrate that expression profiles generated via these methods may not only be useful for screening cDNAs, but also, more importantly, to produce databases that contain cell type specific gene expression profile. Cell type specificity within a database will give an investigator much greater leverage in understanding the contributions of individual cell types to a particular normal or disease state and thus allow for a much finer hypotheses to be subsequently generated. Furthermore, genes, which are coordinately

expressed within a given cell type, can be identified as the database grows to contain numerous gene expression profiles from a variety of cell types (or neuronal subtypes). Coordinate gene expression may also suggest functional coupling between the encoded proteins and therefore aid in determining the function for the vast majority of cDNAs currently cloned.

Laser Capture Microdissection (LCM). Two adult female Sprague Dawley rats were used in this study. Animals were anesthetized with Metofane (Methoxyflurane, Cat# 556850, Mallinckrodt Veterinary Inc. Mundelein, IL) and sacrificed by decapitation. Using RNase-free conditions, cervical dorsal root ganglia (DRGs) were quickly dissected, placed in cryomolds, covered with frozen-tissue embedding medium OCT (Tissue-Tek, GBI, Inc., Clearwater, MN), and frozen in dry ice-cold 2-methylbutane ($\sim -60^{\circ}\text{C}$). The DRGs were then sectioned at 7-10 μm in a cryostat, mounted on plain (non-coated) clean microscope slides, and immediately frozen on a block of dry ice. The sections were stored at -70°C until further use.

A quick Nissl (cresyl violet acetate) staining was employed in order to identify the DRG neurons. Slides containing DRG sections were loaded onto a slide holder, immediately fixed in 100% ethanol for 1 minute followed by rehydration via subsequent immersions (5 seconds each) in 95%, 70%, and 50% ethanol diluted in RNase-free deionized water. Next, the slides were stained with 0.5% Nissl/0.1 M sodium acetate buffer for 1 minute, dehydrated in graded ethanol (5 seconds each), and cleared in xylene (1 minute). Once air-dried, the slides were ready for LCM.

The PixCell II LCMTM System from Acturus Engineering Inc. (Mountain View, CA) was used for laser-capture. Following manufacture's protocols, 2 sets of large and 3 sets small DRG neurons (1000 cells per set) were laser-captured. The criteria for large and small DRG neurons are as follows: a DRG neuron was classified as small if it had a diameter $<25\ \mu\text{m}$ plus an identifiable nucleus whereas a DRG neuron with a diameter $>40\ \mu\text{m}$ plus an identifiable nucleus was classified as large.

RNA extraction of LCM samples. Total RNA was extracted from the LCM samples with Micro RNA Isolation Kit (Stratagene, San Diego, CA) with some modifications. Briefly, after incubating the LCM samples in 200 μl denaturing buffer and 1.6 μl β -Mercaptoethanol at room temperature for 5 minutes, the LCM samples were extracted with 20 μl of 2 M sodium acetate, 220 μl phenol, and 40 μl chloroform:isoamyl alcohol. The

aqueous layer was collected, mixed with 1 µl of 10 mg/ml carrier glycogen, and then precipitated with 200 µl of isopropanol. Following a 70% ethanol wash and air-dry, the pellets were resuspended in 16 µl of RNase-free water, 2 µl 10x DNase I reaction buffer, 1 µl RNasin, and 1 µl of DNase I, then incubated at 37°C for 30 minutes to remove any genomic DNA contamination. The phenol-chloroform extraction was repeated. The pellet was resuspend in 11 µl of RNase-free water and used for RT-PCR and RNA amplification.

Reverse transcription (RT) of RNA. First stand synthesis was completed by adding 10 µl of RNA isolated from the LCM samples and 1 µl of 0.5 mg/ml T7-oligo dT primer (5'TCTAGTCGACGGCCAGTGAATTGTAATACGACTCACTATAGGGCGT₂₁-3'). The primer/RNA mix was incubated for 10 minutes at 70°C, followed by a 5-minute incubation at 42°C. Next, 4 µl 5x first strand reaction buffer, 2 µl 0.1 M DTT, 1 µl 10 mM dNTPs, 1 µl RNasin, and 1 µl Superscript II (Invitrogen, Carlsbad, CA) were added to the mix and incubated at 42°C for one hour. Following this incubation, 30 µl second strand synthesis buffer, 3 µl 10 mM dNTPs, 4 µl DNA Polymerase I, 1 µl *E. coli* RNase H, 1 µl *E. coli* DNA ligase, and 92 µl RNase-free water were added and samples were incubated at 16°C for 2 hours. T4 DNA Polymerase (2 µl) was then added to each sample and samples were incubated for 10 minutes at 16°C. The cDNA was then extracted by the phenol-chloroform method and washed 3x with 500 µl water in a Microcon-100 column (Millipore Corp., Bedford, MA). After collection from the column, the cDNA was dried to a final volume of 8 µl for *in vitro* transcription.

RNA amplification. The *Ampliscribe* T7 Transcription Kit (Epicentre Technologies) was used to amplify RNA. In a microfuge tube, 8 µl double-stranded cDNA; 2 µl of 10x *Ampliscribe* T7 buffer; 1.5 µl of each 100 mM ATP, CTP, GTP, and UTP; 2 µl 0.1 M DTT; and 2 µl T7 RNA Polymerase was added and then incubated at 42°C for 3 hours. The amplified RNA (aRNA) was washed 3x in a Microcon-100 column, collected, and dried to a final volume of 10 µl.

Amplified RNA (10 µl) from the first round amplification was mixed with 1 µl random hexamers (1 mg/ml, Pharmacia Corp., Piscataway, NJ), incubated for 10 minutes at 70°C, chilled on ice, and then equilibrated at room temperature for 10 minutes. For the initial reaction, 4 µl 5x first stand buffer, 2 µl 0.1 M DTT, 1 µl 10mM dNTPs, 1 µl RNasin, and 1 µl Superscript RT II were added to the aRNA mix, and then incubated at room temperature

for 5 minutes followed by a 1-hour incubation at 37°C. Following the 1-hour incubation, 1 µl RNase H was added and the sample was incubated at 37°C for 20 minutes. For second strand cDNA synthesis, 1 µl T7-oligo dT primer (0.5 mg/ml) was added to the aRNA reaction mix and the sample was incubated at 70°C for 5 minutes, then for 10 minutes at 42°C.

- 5 Following this incubation, 30 µl second strand synthesis buffer, 3 µl 10 mM dNTPs, 4 µl DNA Polymerase I, 1 µl *E. coli* RNase H, 1 µl *E. coli* DNA ligase, and 90 µl of RNase-free water were added to the sample mix and the sample was then incubated at 37°C for 2 hours. T4 DNA Polymerase (2 µl) was then added and the sample was incubated for 10 minutes at 16°C. The double-stranded cDNA was extracted with 150 µl phenol/chloroform to remove
10 extraneous protein and purified with Microcon-100 column to remove the unincorporated nucleotides and salts. The cDNA can be used for T7 *in vitro* transcription and aRNA amplification.

- In situ Hybridization.*** Briefly, cDNAs were subcloned into pBluescript II SK (Stratagene). The cDNA vectors were then linearized and radiolabeled by ³⁵S-UTP
15 incorporation via *in vitro* transcription with T7 or T3 RNA polymerase. The probes were then purified with Quick Spin™ Columns (Boehringer Mannheim, Indianapolis, IN). The radiolabeled probes (10⁷ cpm/probe) were hybridized to rat DRG sections (10 µm, 4% paraformaldehyde-fixed) which were mounted on Superfrost Plus slides (VWR). Following an overnight hybridization at 58°C, the slides were exposed to film. Subsequently, the slides
20 were coated with Kodak liquid emulsion NTB2 and exposed in light-proof boxes for 1-2 weeks at 4°C. The slides were developed in Kodak Developer D-19, fixed in Kodak Fixer, and Nissl stained for expression analysis.

- Under light field microscopy, mRNA expression levels of specific cDNAs were semi-quantitatively analyzed. This was accomplished as follows: no expression (-, grains were <5-
25 fold of the background); weak expression (±, grains were 5- to 10-fold of the background); low expression (+, grains were 10- to 20-fold of the background); moderated expression (++ , grains were 20- to 30-fold of the background); and strong expression (+++ , grains were >30-fold of the background) (Figure 6). The percentage of small or large neurons expressing a specific mRNA was obtained by counting the number of labeled (above background) and
30 unlabeled cells from four sections (at least 200 cells were counted).

Microarray design. The 477 cDNA clones, obtained from two separate differential display experiments, were printed on silylated slides. The print spots were about 125 µm in

diameter and were spaced 300 μm apart from center to center. Plant genes were also printed on the slides to serve as a control for non-specific hybridization.

Microarray probe synthesis. Cy3-labeled cDNA probes were synthesized from aRNA isolated from LCM DRGs with Superscript Choice System for cDNA Synthesis (Invitrogen Corp., Carlsbad, CA). In brief, 5 μg aRNA and 3 μg random hexamers were mixed in a total volume of 26 μl (containing RNase-free water), heated to 70°C for 10 minutes, and then chilled on ice. For the labeling reaction, 10 μl first strand buffer, 5 μl 0.1 M DTT, 1.5 μl Rnasin, 1 μl 25 mM d(GAT)TP, 2 μl 1mM dCTP, 2 μl Cy3-dCTP, and 2.5 μl Superscript RT II were added to the aRNA mix and incubated at room temperature for 10 minutes, and then for 2 hours at 37°C. To degrade the aRNA template, 6 μl 3N NaOH was added and the sample was incubated at 65°C for 30 minutes. Following this incubation, 20 μl 1M Tris-HCl (pH 7.4), 12 μl 1N HCl, and 12 μl water were added. The probes were purified with Microcon 30 Columns (Millipore Corp., Bedford, MA) and Qiagen Nucleotide Removal Columns (Qiagen Corp., Valencia, CA). The probes were vacuum-dried and resuspended in 20 μl of hybridization buffer (5x SSC, 0.2% SDS) containing mouse Cot1 DNA.

Microarray hybridization. Printed glass slides were treated with sodium borohydride solution (0.066 M NaBH₄, 0.06 M NaCl) to ensure amino-linkage of cDNAs to the slides. Then, the slides were boiled in water for 2 minutes to denature the cDNA. Cy3-labeled probes were heated to 99°C for 5 minutes, cooled to room temperature for 5 minutes, and then applied to the slides. The slides were covered with glass cover slips, sealed with DPX (Fluka) and hybridized at 60°C for 4-6 hours. At the end of hybridization, the slides were cooled to room temperature. The slides were first washed in 1x SSC and 0.2% SDS at 55°C for 5 minutes, and then washed in 0.1x SSC and 0.2% SDS for 5 minutes at 55°C. After a quick rinse in 0.1x SSC and 0.2% SDS, the slides were air dried and ready for scanning.

Microarray quantitation. The cDNA microarrays were scanned for Cy3 fluorescence using the ScanArray 3000 (General Scanning, Inc., Watertown, MA). ImaGene Software (Biodiscovery, Inc., Marina Del Ray, CA) was then subsequently used for quantitation. Briefly, the intensity of each spot (*i.e.*, cDNA) was corrected by subtracting the immediate surrounding background. Next, the corrected intensities were normalized for each cDNA with the following formula:

$$\frac{\text{intensity (background corrected)}}{75^{\text{th}}\text{-percentile value of the intensity of the entire chip}} \times 1000$$

To determine “non-specific” nucleic acid hybridization, 75th-percentile values were calculated from the individual averages of each plant cDNA (for a total of 30 different cDNAs). The overall 75-percentile value for S1, S2, and S3 was 48.68, and for L1 and L2 was 40.94.

Statistical analyses. To assess the correlation of intensity value for each cDNA between individual sets of neurons (*i.e.*, S1 vs. S2) or between two neuronal subtypes (*i.e.*, small DRG vs. large DRG), scatter plots were used and the linear relationships were measured. The coefficient of determination (R^2) was calculated and indicated the variability of intensity values in one group vs. the other.

To statistically determine whether the intensity values measured from microarray quantitation were true signals, each intensity was compared, via a one-sample *t*-test, to the 75th-percentile value of the 30 plant cDNAs that were present on each chip (representing non-specific nucleic acid hybridization). Values not significantly different from the 75-percentile value are presented in Figure 3 and Figure 4 and so noted. To determine which cDNAs are statistically significant in their differential gene expression between large and small neurons, the intensity for each cDNA from neuronal sets for large neurons (L1 and L2) and small neurons (S1, S2, and S3) were grouped together and intensity values were averaged for each corresponding cDNA. A two-sample *t*-test for one-tailed hypotheses was used to detect a gene expression difference between small neurons and large neurons.

Example 2: Algorithms To Produce Gene Or Protein Expression Profiles

Each cell or tumor type in any given state or age has a unique gene expression pattern that distinguishes it from other tissues or cells. Using profile extraction algorithms, the gene expression profiles from many different cell types may be extracted to create a profile database. Thus, in the broadest sense, unknown samples can then be identified by comparing its profile against such a database.

To create such a database, tissue or cell samples may be divided into classifying groups (*i.e.*, tumor vs. normal; endothelial vs. muscle, etc.). This can be done either manually or if the groups are unknown, by using a clustering algorithm such as k-means. The gene expression data is transformed into a log-ratio value, and the genes with weak

differential values are filtered from the data. The gene expression profiles are then extracted using the MaxCor or Mean Log Ratio algorithms of the present invention.

For an unknown sample, it may be necessary to transform the gene expression data of the sample prior to scoring against the expression profiles. The type of data transformation may depend on the profile extraction algorithm used (*i.e.*, MaxCor or Mean Log Ratio). The sample expression data is then scored against the profile database. A high score indicates that the unknown sample contains or is related to the sample from which the profile was derived. However, the most accurate scoring function will depend on the profile extraction algorithm used to extract the gene expression data.

Preparation of data for profile extraction. First, a reference gene expression vector is constructed where A, B, ... Z denote the groups of samples (*e.g.*, tumor tissue or smooth muscle cell) that will be differentiated and *a, b, ... z* denote the number of samples within each group, respectively. As an example, the notation A_{21} represents the expression intensity from the 2nd gene in sample 1 of group A. If each sample was hybridized to a DNA chip with size *n* genes, then the following matrices represent expression data from all of the groups A, B, ... Z, respectively.

$$\begin{bmatrix} A_{11} & A_{12} & \cdots & A_{1a} \\ A_{21} & A_{22} & \cdots & A_{2a} \\ \vdots & \cdots & \ddots & \vdots \\ A_{n1} & A_{n2} & \cdots & A_{na} \end{bmatrix} \begin{bmatrix} B_{11} & B_{12} & \cdots & B_{1b} \\ B_{21} & B_{22} & \cdots & B_{2b} \\ \vdots & \cdots & \ddots & \vdots \\ B_{n1} & B_{n2} & \cdots & B_{nb} \end{bmatrix} \cdots \begin{bmatrix} Z_{11} & Z_{12} & \cdots & Z_{1z} \\ Z_{21} & Z_{22} & \cdots & Z_{2z} \\ \vdots & \cdots & \ddots & \vdots \\ Z_{n1} & Z_{n2} & \cdots & Z_{nz} \end{bmatrix}$$

The geometric mean expression value is calculated for each gene in each matrix.

Thus, $A_{1(\text{geomean})}$ is the geometric mean of set $(A_{11} \ A_{12} \ \dots \ A_{1a})$ where A_1 denotes gene 1 in group A.

$$\begin{bmatrix} A_{1(\text{geomean})} \\ A_{2(\text{geomean})} \\ \vdots \\ A_{n(\text{geomean})} \end{bmatrix} \begin{bmatrix} B_{1(\text{geomean})} \\ B_{2(\text{geomean})} \\ \vdots \\ B_{n(\text{geomean})} \end{bmatrix} \cdots \begin{bmatrix} Z_{1(\text{geomean})} \\ Z_{2(\text{geomean})} \\ \vdots \\ Z_{n(\text{geomean})} \end{bmatrix}$$

The reference gene expression vector is simply the geometric mean of those vectors:

$$\begin{bmatrix} \bar{X}_1 \\ \bar{X}_2 \\ \vdots \\ \bar{X}_n \end{bmatrix} \text{ where } \bar{X}_i \text{ is the geometric mean of } \{A_{i(\text{geomean})} \ B_{i(\text{geomean})} \ \cdots \ Z_{i(\text{geomean})}\}$$

- 5 The original data set is then transformed by taking the log of the ratio relative to the reference gene expression value for each gene creating the matrices $\{A' \ B' \ \dots \ Z'\}$ where $A'_{11} = \ln(A_{11} / \bar{X}_1)$ and $Z'_{nz} = \ln(Z_{nz} / \bar{X}_n)$. The values now represent the fold increase or decrease over the average for each gene.

$$10 \quad \begin{bmatrix} A'_{11} & A'_{12} & \cdots & A'_{1a} \\ A'_{21} & A'_{22} & \cdots & A'_{2a} \\ \vdots & \cdots & \ddots & \vdots \\ A'_{n1} & A'_{n2} & \cdots & A'_{na} \end{bmatrix} \begin{bmatrix} B'_{11} & B'_{12} & \cdots & B'_{1b} \\ B'_{21} & B'_{22} & \cdots & B'_{2b} \\ \vdots & \cdots & \ddots & \vdots \\ B'_{n1} & B'_{n2} & \cdots & B'_{nb} \end{bmatrix} \cdots \begin{bmatrix} Z'_{11} & Z'_{12} & \cdots & Z'_{1z} \\ Z'_{21} & Z'_{22} & \cdots & Z'_{2z} \\ \vdots & \cdots & \ddots & \vdots \\ Z'_{n1} & Z'_{n2} & \cdots & Z'_{nz} \end{bmatrix}$$

- The genes with a weak differentiation power are removed from the matrix. The Kruskal-Wallis rank test was used to rank the genes with the highest differentiation power for separating the groups, A, B, ... Z. A low p-value from the rank test indicates a high differentiation power. A p-value of 0.0025 was used as the cut-off value.

Finally, for each resulting matrix $\{A'' \ B'' \ \dots \ Z''\}$, apply a profile extraction algorithm to create a profile representing each group.

- Profile extraction using the MaxCor algorithm.** The MaxCor algorithm is applied to each group $\{A'' \ B'' \ \dots \ Z''\}$ separately. For each pair of columns in the matrix, the genes coordinately expressed in high, average, or low levels over the mean (defined below) are given a value (1, 0, or -1, respectively), producing a weight vector representing the pair. Thus, for matrix A'' , $\left(\frac{a(a-1)}{2}\right)$, pairwise calculations are performed to produce a weight vector representing the matrix pair. A final average weight vector which will be the profile for group A, is computed by averaging each weight vector calculated for matrix A'' . The

profile contains the same number of genes as A'' and its values should be within [-1 to 1]. These values, -1 and 1, represent the genes consistently expressed in low or high levels, respectively, relative to the mean of all groups. The MaxCor algorithm is applied to each group individually to produce a profile for each group.

5 **Value assignment for coordinately expressed genes.** For a pair of columns (c1 and c2), the values are normalized to create $c1'$ and $c2'$. Thus, $c1_i$ becomes $\left(\frac{c1_i - \bar{c1}}{S_{c1}}\right)$ where $\bar{c1}$ is the mean of column c1 and S_{c1} is the standard deviation. For each gene pair in $c1'$ and $c2'$, the normalized values are stored as vector $p12$ and then the $p12$ values are sorted from lowest to highest. A cutoff value is established, such as 0.5, and all genes with a greater normalized
10 value than the cutoff value are collected in $p12$. The Pearson correlation coefficient is calculated for this set of genes using the values in column c1 and c2. The cutoff value is then continually increased until the correlation coefficient is greater than a set value, such as 0.8. When this is complete, the set of genes meeting this criteria is assigned a value of 1 if both gene values in $c1'$ and $c2'$ are positive and -1 if both gene values are negative. For all other
15 genes in $c1'$ and $c2'$, a zero value is assigned. The resulting vector is a weight vector which represents the pair.

Sample scoring using the MaxCor algorithm. Before scoring a new sample, the genes in the sample S with weak differentiation values are removed so that the rows remaining are the same as those in the profile vectors, thus creating sample vector S'' . The
20 score is the sum of the normalized values for each gene in S'' and its weight in the profile vector. For example, the score between sample vector S'' and profile vector A^s is $\sum_{i=1-n} S''_i A^s_i$. The normalized score is (score - mean of randomized score)/(standard deviation of randomized score), where the randomized score is the score between S'' and the profile vector which has its gene positions randomized. Typically, 100 randomized scores are generated to
25 calculate the mean and the standard deviation.

Profile extraction using the Mean Log Ratio approach. This algorithm is also applied to each group or matrix $\{A'' B'' \dots Z''\}$ individually. For each matrix, the profile vector is the row mean of the matrix. Thus, the profile vectors for groups $\{A'' B'' \dots Z''\}$ are:

30

$$\begin{bmatrix} \overline{A_1''} \\ \overline{A_2''} \\ \vdots \\ \overline{A_n''} \end{bmatrix} \begin{bmatrix} \overline{B_1''} \\ \overline{B_2''} \\ \vdots \\ \overline{B_n''} \end{bmatrix} \dots \begin{bmatrix} \overline{Z_1''} \\ \overline{Z_2''} \\ \vdots \\ \overline{Z_n''} \end{bmatrix} \text{ where } \overline{A_1''} \text{ is the mean of } \{A_{11}'', A_{12}'', \dots, A_{1a}''\}.$$

Sample scoring using the Mean Log Ratio expression profiles. Prior to scoring a new sample, the gene expression vector of the sample is transformed by taking the log ratio relative to the reference gene expression vector for each gene. For example, the transformation of the sample S is:

$$S = \begin{bmatrix} S_1 \\ S_2 \\ \vdots \\ S_n \end{bmatrix} \text{ which leads to } S' = \begin{bmatrix} S'_1 \\ S'_2 \\ \vdots \\ S'_n \end{bmatrix}, \text{ where } S'_1 = \ln(S_1 / \overline{A_1}).$$

The genes with weak differentiation values are removed so the rows remaining are the same as those in the profile vectors, thus creating sample vector S'' . The score against each profile is then calculated by taking the Euclidean distance between S'' and the profile vector. The normalized score is (score – mean of randomized score)/(standard deviation of randomized score), where the randomized score is the Euclidean distance between S'' and the profile vector which has randomized gene positions. Typically, 100 randomized scores are generated to calculate the mean and the standard deviation.

Example 3: Gene Expression Profiles For Human Primary Cells

Gene expression profiles were collected from a set of human primary cells via DNA microarray technology. These gene expression profiles can then be used to classify unknown cell or tissue samples.

Thirty human primary cell samples were purchased from Clonetics Corporation (San Diego, CA). These primary cells were classified into the following categories: endothelial, epithelial, and muscle and also categorized based on the origin of tissue (Figure 7). Total RNA was extracted, amplified, and labeled with Cy5-dCTP as described in Example 1. The resultant labeled cDNAs were hybridized to microarray chips, which contain 7286 DNA

molecules representing 3643 unique genes each spotted twice. Each labeled cDNA probe was separated into two aliquots and each aliquot was hybridized to an identical microarray chip. Following a wash, the cDNA chips were scanned and the intensity of the spots was recorded and converted into a numerical value. To normalize the data, the spot intensities of each chip were divided by the intensity value of the 75th percentile of the chip, then these values were multiplied by 100. For each primary cell, a final gene intensity vector is produced by averaging four intensity values for each gene (2 spots per chip times 2 chips). The controls, low quality samples, and missing data values were removed, and 3940 genes were used for the final analysis.

Clustering analysis of the gene expression vectors of the primary cell samples confirmed that these samples could be classified into three groups: endothelial, epithelial, and muscle cell (Figure 8). A reference vector was generated, and the intensities were converted into a log ratio. A gene was filtered from the matrix if the p-value from the Kruskal-Wallis rank test was greater than 0.0025.

The resultant transformed matrix, composed of 459 genes from the 30 primary cell types, was then used for profile extraction using the Mean Log Ratio algorithm as described (Figure 9). Four expression profiles were generated, primary, endothelial, epithelial, and muscle (Figures 9, 10, 11, and 12). The primary profile represents 186 genes that may be used to classify primary cells. The endothelial profile represents 55 genes that may be used to classify endothelial cells. The epithelial profile represents 52 genes that may be used to classify epithelial cells. Finally, the muscle profile represents 40 genes that may be used to classify muscle cells. The sequence source (Seq. Source) is the gene database (GB: GenBank; and INCYTE: Incyte Genomes) that the sequence was selected from and the Seq ID is the accession number of the particular gene sequence. The endothelial, epithelial, and muscle profile values are the numeric representation of the specific profile. The p-value is based on the Kruskal-Wallis rank test in which smaller p-values represents clones with higher discriminate power for classifying samples. The source description identifies the particular gene.

These expression profiles are also shown graphically by assigning colors to the numeric values obtained (Figure 13). The expression profiles were then used to classify the 30 primary cells by taking each transformed primary cell gene expression vector and scoring it against the three expression profiles separately using the Mean Log Ratio scoring algorithm. The results demonstrated that the endothelial, epithelial, and muscle cell types

scored high against their own expression profiles but low against the other two expression profiles (Figure 14).

In additional experiments, a different primary cell sample was removed from the profile generation step and then scored against the resultant profile. The results from this analysis were similar to that in Figure 5 indicating that the expression profiles can be used to score against independent samples (Figure 15).

The analysis was repeated using the MaxCor algorithm as described. The self-validation results are shown in Figure 16 and the omit one analysis result in Figure 17. The results are essentially the same as that from the Mean Log Ratio analysis.

Figure 9 shows a gene expression profile for primary cells. Specifically, a primary cell gene expression profile may comprise one or more of the following nucleic acid sequences: SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 38; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 43; SEQ ID NO: 44; SEQ ID NO: 45; SEQ ID NO: 46; SEQ ID NO: 47; SEQ ID NO: 48; SEQ ID NO: 49; SEQ ID NO: 50; SEQ ID NO: 51; SEQ ID NO: 52; SEQ ID NO: 53; SEQ ID NO: 54; SEQ ID NO: 55; SEQ ID NO: 56; SEQ ID NO: 57; SEQ ID NO: 58; SEQ ID NO: 59; SEQ ID NO: 60; SEQ ID NO: 61; SEQ ID NO: 62; SEQ ID NO: 63; SEQ ID NO: 64; SEQ ID NO: 65; SEQ ID NO: 66; SEQ ID NO: 67; SEQ ID NO: 68; SEQ ID NO: 69; SEQ ID NO: 70; SEQ ID NO: 71; SEQ ID NO: 72; SEQ ID NO: 73; SEQ ID NO: 74; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ ID NO: 78; SEQ ID NO: 79; SEQ ID NO: 80; SEQ ID NO: 81; SEQ ID NO: 82; SEQ ID NO: 83; SEQ ID NO: 84; SEQ ID NO: 85; SEQ ID NO: 86; SEQ ID NO: 87; SEQ ID NO: 88; SEQ ID NO: 89; SEQ ID NO: 90; SEQ ID NO: 91; SEQ ID NO: 92; SEQ ID NO: 93; SEQ ID NO: 94; SEQ ID NO: 95; SEQ ID NO: 96; SEQ ID NO: 97; SEQ ID NO: 98; SEQ ID NO: 99; SEQ ID NO: 100; SEQ ID NO: 101; SEQ ID NO: 102; SEQ ID NO: 103; SEQ ID NO: 104; SEQ ID NO: 105; SEQ ID NO: 106; SEQ ID NO: 107; SEQ ID NO: 108; SEQ ID NO: 109; SEQ ID NO: 110; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 113; SEQ ID NO: 114; SEQ ID NO:

115; SEQ ID NO: 116; SEQ ID NO: 117; SEQ ID NO: 118; SEQ ID NO: 119; SEQ ID NO: 120; SEQ ID NO: 121; SEQ ID NO: 122; SEQ ID NO: 123; SEQ ID NO: 124; SEQ ID NO: 125; SEQ ID NO: 126; SEQ ID NO: 127; SEQ ID NO: 128; SEQ ID NO: 129; SEQ ID NO: 130; SEQ ID NO: 131; SEQ ID NO: 132; SEQ ID NO: 133; SEQ ID NO: 134; SEQ ID NO: 135; SEQ ID NO: 136; SEQ ID NO: 137; SEQ ID NO: 138; SEQ ID NO: 139; SEQ ID NO: 140; SEQ ID NO: 141; SEQ ID NO: 142; SEQ ID NO: 143; SEQ ID NO: 144; SEQ ID NO: 145; SEQ ID NO: 146; SEQ ID NO: 147; SEQ ID NO: 148; SEQ ID NO: 149; SEQ ID NO: 150; SEQ ID NO: 151; SEQ ID NO: 152; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186. Accordingly, these sequences may be used to identify a primary cell gene expression profile, which then may be used to classify unknown cell or tissue samples.

A primary cell gene expression profile may additionally comprise one or more of the following nucleic acid sequences: SEQ ID NO: 188; SEQ ID NO: 193; SEQ ID NO: 216; SEQ ID NO: 224; SEQ ID NO: 230; SEQ ID NO: 248; SEQ ID NO: 249; SEQ ID NO: 250; SEQ ID NO: 253; SEQ ID NO: 271; SEQ ID NO: 281; SEQ ID NO: 324; SEQ ID NO: 337; SEQ ID NO: 346; SEQ ID NO: 388; SEQ ID NO: 403; SEQ ID NO: 410; SEQ ID NO: 415; SEQ ID NO: 421; SEQ ID NO: 422; SEQ ID NO: 425; SEQ ID NO: 427; SEQ ID NO: 428; SEQ ID NO: 432; SEQ ID NO: 433; SEQ ID NO: 437; SEQ ID NO: 440; SEQ ID NO: 443; SEQ ID NO: 444; SEQ ID NO: 447; SEQ ID NO: 449; SEQ ID NO: 451; SEQ ID NO: 452; SEQ ID NO: 455; SEQ ID NO: 457; SEQ ID NO: 460; SEQ ID NO: 462; SEQ ID NO: 465; SEQ ID NO: 466; SEQ ID NO: 476; SEQ ID NO: 477; SEQ ID NO: 482; SEQ ID NO: 484; SEQ ID NO: 490; SEQ ID NO: 492; SEQ ID NO: 493; SEQ ID NO: 495; SEQ ID NO: 498; SEQ ID NO: 499; SEQ ID NO: 502; SEQ ID NO: 504; SEQ ID NO: 505; SEQ ID NO: 514; SEQ ID NO: 515; SEQ ID NO: 518; SEQ ID NO: 524; SEQ ID NO: 528; SEQ ID NO: 530; SEQ ID NO: 531; SEQ ID NO: 532; SEQ ID NO: 536; SEQ ID NO: 539; SEQ ID NO: 541; SEQ ID NO: 545; SEQ ID NO: 551; SEQ ID NO: 563; SEQ ID NO: 565; SEQ ID NO: 567; SEQ ID NO: 573; SEQ ID NO: 577; SEQ ID NO: 580; SEQ ID NO: 582; SEQ ID NO: 585;

SEQ ID NO: 588; SEQ ID NO: 590; SEQ ID NO: 592; SEQ ID NO: 594; SEQ ID NO: 595;
 SEQ ID NO: 598; SEQ ID NO: 599; SEQ ID NO: 601; SEQ ID NO: 605; SEQ ID NO: 607;
 SEQ ID NO: 608; SEQ ID NO: 613; SEQ ID NO: 623; SEQ ID NO: 625; SEQ ID NO: 626;
 SEQ ID NO: 631; SEQ ID NO: 650; SEQ ID NO: 652; SEQ ID NO: 654; SEQ ID NO: 657;
 5 SEQ ID NO: 661; SEQ ID NO: 665; SEQ ID NO: 671; SEQ ID NO: 672; SEQ ID NO: 673;
 SEQ ID NO: 674; SEQ ID NO: 675; SEQ ID NO: 676; SEQ ID NO: 677; SEQ ID NO: 678;
 SEQ ID NO: 680; SEQ ID NO: 681; SEQ ID NO: 684; SEQ ID NO: 685; SEQ ID NO: 686;
 SEQ ID NO: 687; SEQ ID NO: 688; SEQ ID NO: 689; SEQ ID NO: 690; SEQ ID NO: 691;
 SEQ ID NO: 692; SEQ ID NO: 694; SEQ ID NO: 695; SEQ ID NO: 696; SEQ ID NO: 697;
 10 SEQ ID NO: 698; SEQ ID NO: 699; SEQ ID NO: 700; SEQ ID NO: 701; SEQ ID NO: 702;
 SEQ ID NO: 704; SEQ ID NO: 705; SEQ ID NO: 706; SEQ ID NO: 707; SEQ ID NO: 708;
 SEQ ID NO: 709; SEQ ID NO: 710; SEQ ID NO: 711; SEQ ID NO: 712; SEQ ID NO: 713;
 SEQ ID NO: 714; SEQ ID NO: 715; SEQ ID NO: 716; SEQ ID NO: 717; SEQ ID NO: 718;
 SEQ ID NO: 719; SEQ ID NO: 720; SEQ ID NO: 721; SEQ ID NO: 722; SEQ ID NO: 723;
 15 SEQ ID NO: 724; SEQ ID NO: 725; SEQ ID NO: 726; SEQ ID NO: 727; SEQ ID NO: 728;
 SEQ ID NO: 729; SEQ ID NO: 730; SEQ ID NO: 731; SEQ ID NO: 732; SEQ ID NO: 733;
 SEQ ID NO: 734; SEQ ID NO: 735; SEQ ID NO: 736; SEQ ID NO: 737; SEQ ID NO: 738;
 SEQ ID NO: 739; SEQ ID NO: 740; SEQ ID NO: 741; SEQ ID NO: 742; SEQ ID NO: 743;
 SEQ ID NO: 744; SEQ ID NO: 745; SEQ ID NO: 746; SEQ ID NO: 747; SEQ ID NO: 748;
 20 SEQ ID NO: 749; SEQ ID NO: 750; SEQ ID NO: 751; SEQ ID NO: 752; SEQ ID NO: 753;
 SEQ ID NO: 754; SEQ ID NO: 755; SEQ ID NO: 756; SEQ ID NO: 758; SEQ ID NO: 759;
 SEQ ID NO: 760; SEQ ID NO: 761; SEQ ID NO: 762; SEQ ID NO: 763; SEQ ID NO: 764;
 SEQ ID NO: 765; SEQ ID NO: 766; SEQ ID NO: 767; SEQ ID NO: 768; SEQ ID NO: 769;
 SEQ ID NO: 770; SEQ ID NO: 771; SEQ ID NO: 772; SEQ ID NO: 773; SEQ ID NO: 774;
 25 SEQ ID NO: 775; SEQ ID NO: 776; SEQ ID NO: 777; SEQ ID NO: 778; SEQ ID NO: 779;
 SEQ ID NO: 780; SEQ ID NO: 781; SEQ ID NO: 782; SEQ ID NO: 783; SEQ ID NO: 784;
 SEQ ID NO: 785; SEQ ID NO: 786; SEQ ID NO: 787; SEQ ID NO: 788; SEQ ID NO: 789;
 SEQ ID NO: 790; SEQ ID NO: 791; SEQ ID NO: 792; SEQ ID NO: 793; SEQ ID NO: 794;
 SEQ ID NO: 795; SEQ ID NO: 796; SEQ ID NO: 797; SEQ ID NO: 798; SEQ ID NO: 799;
 30 SEQ ID NO: 800; SEQ ID NO: 801; SEQ ID NO: 802; and SEQ ID NO: 803.

As the example shows, primary cell gene expression profile may also comprise, for
 instance, the nucleic acid sequences having the following accession numbers: INCYTE
 2997284H1; INCYTE 1726828F6; INCYTE 1690295F6; INCYTE 530695T6; INCYTE

2313677H1; INCYTE 2510757F6; INCYTE 1696122T6; GB M20566; INCYTE
 1742456R6; INCYTE 3584702H1; INCYTE 2222054H1; INCYTE 928019R6; INCYTE
 1716001T6; INCYTE 2211526T6; INCYTE 2604309F6; INCYTE 3269857F6; INCYTE
 1751294F6; INCYTE 3118530H1; INCYTE 1519824H1; INCYTE 1429303H1; INCYTE
 5 449937H1; INCYTE 150224T6; INCYTE 1652456H1; INCYTE 2116716T6; INCYTE
 637471CA2; INCYTE 3105066H1; INCYTE 1946704H1; INCYTE 5547273H1; INCYTE
 2194901H1; INCYTE 3097063H1; INCYTE 399998H1; INCYTE 3320154H1; GB X87344;
 INCYTE 2169635T6; and INCYTE 767295H1.

Figure 10 displays the genes that comprise an endothelial gene expression profile.

10 Specifically, an endothelial gene expression profile may comprise one or more nucleic acid
 sequences including, but not limited to, SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ
 ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9;
 SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ
 ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID
 15 NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 48; SEQ ID NO:
 63; SEQ ID NO: 70; SEQ ID NO: 82; SEQ ID NO: 94; and SEQ ID NO: 144. Accordingly,
 these sequences may be used to identify an endothelial gene expression profile, which then
 may be used to classify unknown cell or tissue samples.

An endothelial gene expression profile may additionally comprise one or more
 20 nucleic acid sequences including, but not limited to, SEQ ID NO: 427; SEQ ID NO: 460;
 SEQ ID NO: 484; SEQ ID NO: 565; SEQ ID NO: 580; SEQ ID NO: 590; SEQ ID NO: 670;
 SEQ ID NO: 672; SEQ ID NO: 673; SEQ ID NO: 674; SEQ ID NO: 675; SEQ ID NO: 676;
 SEQ ID NO: 677; SEQ ID NO: 678; SEQ ID NO: 680; SEQ ID NO: 723; SEQ ID NO: 741;
 and SEQ ID NO: 754.

25 As the example shows, an endothelial gene expression profile may also comprise, for
 example, the nucleic acid sequences having the following accession numbers: INCYTE
 530695T6 and INCYTE 1716001T6.

The gene expression profile depicted in Figure 11 may be used to identify epithelial
 cells. Specifically, an epithelial gene expression profile may comprise one or more nucleic
 30 acid sequences including, but not limited to, SEQ ID NO: 47; SEQ ID NO: 60; SEQ ID NO:
 67; SEQ ID NO: 73; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ ID NO: 78;
 SEQ ID NO: 80; SEQ ID NO: 96; SEQ ID NO: 98; SEQ ID NO: 99; SEQ ID NO: 111; SEQ
 ID NO: 112; SEQ ID NO: 117; SEQ ID NO: 123; SEQ ID NO: 127; SEQ ID NO: 131; SEQ

ID NO: 150; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; SEQ ID NO: 186.

Figure 12 shows the gene expression profile generated from muscle cells. In one embodiment, a muscle cell gene expression profile may comprise one or more nucleic acid sequences including, but not limited to, SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 38; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 54; SEQ ID NO: 55; and SEQ ID NO: 69. Accordingly, these sequences may be used to identify a muscle gene expression profile, which then may be used to classify unknown cell or tissue samples.

A muscle gene expression profile may additionally comprise one or more nucleic acid sequences including, but not limited to, SEQ ID NO: 188; SEQ ID NO: 193; SEQ ID NO: 216; SEQ ID NO: 250; SEQ ID NO: 499; SEQ ID NO: 504; SEQ ID NO: 563; SEQ ID NO: 652; SEQ ID NO: 681; SEQ ID NO: 682; SEQ ID NO: 683; SEQ ID NO: 684; SEQ ID NO: 685; SEQ ID NO: 686; SEQ ID NO: 687; SEQ ID NO: 688; SEQ ID NO: 689; SEQ ID NO: 690; and SEQ ID NO: 691.

Example 4: Gene Expression Profiles for Epithelial Cell Subtypes

Gene expression profiles that define a particular type of epithelial cell were generated using the methodologies, microarrays and algorithms of the present invention. Epithelial cell lines were used to generate the cell type specific gene expression profiles. The epithelial cell lines used in this example were derived from various tissues including keratinocyte epithelium, mammary epithelium, bronchial epithelium, prostate epithelium, renal cortical epithelium, renal proximal tubule epithelium, small airway epithelium, and renal epithelium.

Complementary DNA made from each of the eight cell lines was used to probe the microarray. Briefly, and as described in the previous examples, total RNA was extracted, amplified, and labeled. The resultant labeled cDNAs were hybridized to microarray chips. Following one or more washing steps, the microarrays were scanned and the intensity of the spots was recorded and converted into a numerical value and normalized. Next, the algorithms of the present invention were applied to extract a gene expression profile that defined the subtype of epithelial cell.

The microarrays used in this example comprised the following nucleic acid sequences: SEQ ID NO: 187; SEQ ID NO: 188; SEQ ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ ID NO: 192; SEQ ID NO: 193; SEQ ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ ID NO: 197; SEQ ID NO: 198; SEQ ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ ID NO: 202; SEQ ID NO: 203; SEQ ID NO: 204; SEQ ID NO: 205; SEQ ID NO: 206; SEQ ID NO: 207; SEQ ID NO: 208; SEQ ID NO: 209; SEQ ID NO: 210; SEQ ID NO: 211; SEQ ID NO: 150; SEQ ID NO: 27; SEQ ID NO: 169; SEQ ID NO: 212; SEQ ID NO: 213; SEQ ID NO: 131; SEQ ID NO: 214; SEQ ID NO: 215; SEQ ID NO: 216; SEQ ID NO: 217; SEQ ID NO: 218; SEQ ID NO: 138; SEQ ID NO: 219; SEQ ID NO: 220; SEQ ID NO: 221; SEQ ID NO: 222; SEQ ID NO: 223; SEQ ID NO: 224; SEQ ID NO: 225; SEQ ID NO: 226; SEQ ID NO: 227; SEQ ID NO: 228; SEQ ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ ID NO: 232; SEQ ID NO: 78; SEQ ID NO: 233; SEQ ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 236; SEQ ID NO: 237; SEQ ID NO: 238; SEQ ID NO: 239; SEQ ID NO: 240; SEQ ID NO: 241; SEQ ID NO: 242; SEQ ID NO: 243; SEQ ID NO: 64; SEQ ID NO: 244; SEQ ID NO: 245; SEQ ID NO: 246; SEQ ID NO: 247; SEQ ID NO: 248; SEQ ID NO: 249; SEQ ID NO: 250; SEQ ID NO: 251; SEQ ID NO: 252; SEQ ID NO: 253; SEQ ID NO: 254; SEQ ID NO: 37; SEQ ID NO: 106; SEQ ID NO: 255; SEQ ID NO: 123; SEQ ID NO: 256; SEQ ID NO: 257; SEQ ID NO: 258; SEQ ID NO: 259; SEQ ID NO: 260; SEQ ID NO: 261; SEQ ID NO: 262; SEQ ID NO: 263; SEQ ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 266; SEQ ID NO: 267; SEQ ID NO: 268; SEQ ID NO: 269; SEQ ID NO: 57; SEQ ID NO: 70; SEQ ID NO: 270; SEQ ID NO: 271; SEQ ID NO: 272; SEQ ID NO: 273; SEQ ID NO: 274; SEQ ID NO: 275; SEQ ID NO: 276; SEQ ID NO: 277; SEQ ID NO: 278; SEQ ID NO: 279; SEQ ID NO: 104; SEQ ID NO: 280; SEQ ID NO: 281; SEQ ID NO: 282; SEQ ID NO: 283; SEQ ID NO: 284; SEQ ID NO: 285; SEQ ID NO: 286; SEQ ID NO: 287; SEQ ID NO: 288; SEQ ID NO: 160; SEQ ID NO: 289; SEQ ID NO: 290; SEQ ID NO: 291; SEQ ID NO: 293; SEQ ID NO: 294; SEQ ID NO: 295; SEQ ID NO: 296; SEQ ID NO: 297; SEQ ID

NO: 49; SEQ ID NO: 298; SEQ ID NO: 299; SEQ ID NO: 300; SEQ ID NO: 301; SEQ ID
 NO: 302; SEQ ID NO: 303; SEQ ID NO: 304; SEQ ID NO: 305; SEQ ID NO: 306; SEQ ID
 NO: 307; SEQ ID NO: 308; SEQ ID NO: 183; SEQ ID NO: 309; SEQ ID NO: 310; SEQ ID
 NO: 311; SEQ ID NO: 312; SEQ ID NO: 313; SEQ ID NO: 314; SEQ ID NO: 315; SEQ ID
 5 NO: 316; SEQ ID NO: 310; SEQ ID NO: 317; SEQ ID NO: 174; SEQ ID NO: 318; SEQ ID
 NO: 320; SEQ ID NO: 173; SEQ ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 323; SEQ ID
 NO: 324; SEQ ID NO: 325; SEQ ID NO: 326; SEQ ID NO: 158; SEQ ID NO: 327; SEQ ID
 NO: 328; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 329

Figure 18 shows the results from all eight of the hybridizations. The cutoff value was
 10 set for expression values over 2.0, *i.e.*, two-fold induction over baseline. This particular
 portrayal of the data shows the relative expression values sorted for keratinocyte epithelial
 cells. Several genes, specifically, nucleic acid sequences SEQ ID NO: 187; SEQ ID NO:
 188; SEQ ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ ID NO: 192; SEQ ID NO:
 193; SEQ ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ ID NO: 197; SEQ ID NO:
 15 198; SEQ ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ ID NO: 202; SEQ ID NO:
 203; SEQ ID NO: 204; SEQ ID NO: 205; SEQ ID NO: 206; SEQ ID NO: 207; SEQ ID NO:
 208; SEQ ID NO: 209; SEQ ID NO: 210; and SEQ ID NO: 211, show a relative expression
 value over 2.0, which is the cut-off in the context of the algorithm. These genes represent
 signature genes, *i.e.*, a gene expression profile of keratinocyte epithelial cells, which may be
 20 used to identify and classify unknown samples.

With regard to the other columns, it is possible to sort the data and identify genes
 representing gene expression profiles of a particular cell type. For example, and referring to
 Figure 18, sorting the data based on relative expression values and using the value of 2.0 as a
 cutoff in the context of the algorithm, the following genes represent a mammary epithelial
 25 cells gene expression profile: SEQ ID NO: 212; SEQ ID NO: 213; SEQ ID NO: 216; SEQ ID
 NO: 225; SEQ ID NO: 226; SEQ ID NO: 227; SEQ ID NO: 78; SEQ ID NO: 239; SEQ ID
 NO: 271; SEQ ID NO: 285; and SEQ ID NO: 289.

Similarly, and referring to Figure 18, sorting the data based on relative expression
 values and using the value of 2.0 as a cutoff in the context of the algorithm, the following
 30 genes represent a bronchial epithelial cells gene expression profile: SEQ ID NO: 150; SEQ ID
 NO: 27; SEQ ID NO: 169; SEQ ID NO: 131; SEQ ID NO: 214; SEQ ID NO: 215; SEQ ID
 NO: 223; SEQ ID NO: 224; SEQ ID NO: 241; SEQ ID NO: 243; SEQ ID NO: 244; SEQ ID
 NO: 255; SEQ ID NO: 256; SEQ ID NO: 261; and SEQ ID NO: 314.

Referring to Figure 18, sorting the data based on relative expression values and using the value of 2.0 as a cutoff in the context of the algorithm, the following genes represent a prostate epithelial cells gene expression profile: SEQ ID NO: 217; SEQ ID NO: 218; SEQ ID NO: 64; SEQ ID NO: 259; SEQ ID NO: 293; SEQ ID NO: 302; and SEQ ID NO: 320.

5 Likewise, referring to Figure 18, sorting the data based on relative expression values and using the value of 2.0 as a cutoff in the context of the algorithm, the following genes represent a renal cortical epithelial cells gene expression profile: SEQ ID NO: 219; SEQ ID NO: 123; SEQ ID NO: 267; SEQ ID NO: 57; SEQ ID NO: 270; SEQ ID NO: 279; SEQ ID NO: 104; SEQ ID NO: 28; SEQ ID NO: 283; SEQ ID NO: 160; SEQ ID NO: 291; SEQ ID
10 NO: 300; SEQ ID NO: 305; SEQ ID NO: 307; SEQ ID NO: 310; SEQ ID NO: 313; SEQ ID NO: 310; SEQ ID NO: 325; SEQ ID NO: 326; SEQ ID NO: 327; SEQ ID NO: 165; and SEQ ID NO: 166.

Referring to Figure 18, sorting the data based on relative expression values and using the value of 2.0 as a cutoff in the context of the algorithm, the following genes represent a
15 renal proximal tubule epithelial cells gene expression profile: SEQ ID NO: 106; SEQ ID NO: 138; SEQ ID NO: 158; SEQ ID NO: 228; SEQ ID NO: 236; SEQ ID NO: 242; SEQ ID NO: 250; SEQ ID NO: 258; SEQ ID NO: 260; SEQ ID NO: 262; SEQ ID NO: 266; SEQ ID NO: 272; SEQ ID NO: 273; SEQ ID NO: 274; SEQ ID NO: 275; SEQ ID NO: 276; SEQ ID NO: 278; SEQ ID NO: 284; SEQ ID NO: 288; SEQ ID NO: 295; SEQ ID NO: 296; SEQ ID NO:
20 297; SEQ ID NO: 299; SEQ ID NO: 300; SEQ ID NO: 301; SEQ ID NO: 306; SEQ ID NO: 308; SEQ ID NO: 309; SEQ ID NO: 311; SEQ ID NO: 316; SEQ ID NO: 318; SEQ ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 328; and SEQ ID NO: 329.

Moreover, and referring to Figure 18, sorting the data based on relative expression values and using the value of 2.0 as a cutoff in the context of the algorithm, the following
25 genes represent a small airway epithelial cells gene expression profile: SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 183; SEQ ID NO: 220; SEQ ID NO: 221; SEQ ID NO: 222; SEQ ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ ID NO: 232; SEQ ID NO: 233; SEQ ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 237; SEQ ID NO: 238; SEQ ID NO: 240; SEQ ID NO: 245; SEQ ID NO: 246; SEQ ID NO: 247; SEQ ID NO: 248; SEQ ID NO: 249;
30 SEQ ID NO: 251; SEQ ID NO: 252; SEQ ID NO: 254; SEQ ID NO: 257; SEQ ID NO: 263; SEQ ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 268; SEQ ID NO: 269; SEQ ID NO: 270; SEQ ID NO: 277; SEQ ID NO: 281; SEQ ID NO: 282; SEQ ID NO: 286; SEQ ID NO: 287;

SEQ ID NO: 290; SEQ ID NO: 294; SEQ ID NO: 298; SEQ ID NO: 303; SEQ ID NO: 312; SEQ ID NO: 315; SEQ ID NO: 317; and SEQ ID NO: 319.

Still further, and referring to Figure 18, sorting the data based on relative expression values and using the value of 2.0 as a cutoff in the context of the algorithm, the following
5 genes represent a renal epithelial cells gene expression profile: SEQ ID NO: 37; SEQ ID NO: 253; SEQ ID NO: 304; SEQ ID NO: 323; and SEQ ID NO: 324.

Example 5: Rat Toxicology Reference Database

To assess the toxicity of known compounds on gene and/or protein expression, a rat
10 expression database is constructed. The database consists of gene expression profiles and protein expression profiles, as well as serum chemistry, hematology measurements, histopathology, and general clinical observations, from 100 different compounds at two doses and at two timepoints per dose. The compounds contain at least 10 different mechanisms of liver and kidney toxicity.

15 Sprague-Dawley rats are treated with compound via intraperitoneal administration. Dose groups include a low dose and a high dose for a 24-hour exposure and a low dose and a high dose for a 72-hour exposure. Three animals are treated per dose group as well as two control animal per timepoint. Following treatment, tissue are collected for gene expression and/or protein expression analysis including liver, kidney, white blood cells, lung, heart,
20 intestine, testes, and spleen. Other toxicological evaluations include serum chemistry, hematology, organ weights, animal weights, and clinical observations.

Dose selection is based on literature reports with low dose defined as the lowest historical dose that elicited an endpoint and high dose is defined as the dose reported to result in a significant number of animals exhibiting characteristic toxicity.

25 The toxic effects of these compounds on gene expression and protein expression are analyzed using a toxicity microarray. For each compound, 15 rats are treated with the compound and tissue samples from each rat are collected and analyzed. The expression patterns in liver, kidney, heart, brain, intestine, testes, spleen, and white blood cells are analyzed following treatment with a toxic compounds. To generate the target nucleic acids,
30 RNA or protein is isolated from each tissue sample and prepared for microarray hybridization as described above. Genes and/or proteins demonstrating alterations in expression level are selected for inclusion on the rat toxicity microarray. In addition, approximately 600 genes and/or protein-capture agents derived therefrom identified as toxicologically relevant based

on review of the scientific literature are also be included on the microarray. In total, about 4,000 cDNAs or protein-capture agents reflecting the genes and/or proteins susceptible to the toxicity of these compounds.

Data reflecting the gene expression profiles of each tissue and toxin is placed in the database including an annotation describing dosage and clinical observations. The database provides information describing mechanisms of action as well as previously reported alterations of gene expression observed following administration of these compounds. The database is also used in the drug discovery process by providing information which permits the elimination of potentially toxic compounds.

Example 6: Expression Profiles As A Diagnostic For Disease

The microarray technology may also be used to identify a particular disease (*e.g.*, cancer), and provide a patient diagnosis. Initially, reference genes and/or proteins are generated for both normal and cancer cell types. Isolated cell types are derived by a number of methods known in the art (*e.g.*, FACS sorting, magnoferic solutions, magnetic beads in combination with cell-specific antibodies). Cells from tissues are isolated by tissue staining with a cell-specific antibody, followed by laser capture microscopy or electrostatic methods. RNA is isolated from the cells and then probes are created for the generation of microarrays using the methods described above. Similarly, protein may be isolated from the cells and used to probe a microarray comprising protein-capture agents using the methods described above.

Data from the microarrays for each cell type is then placed in a database along with an annotation describing cell type and location. Using cluster analysis and algorithms, gene and/or protein expression profiles for each cell type are determined.

For a diagnosis of Hodgkin lymphoma or non-Hodgkin lymphoma, biological samples are collected from patients and RNA or protein is isolated from the samples, as described above. The cDNA or protein is then hybridized to microarrays containing genes or protein-capture agents representing normal, Hodgkin lymphoma, and non-Hodgkin lymphoma samples. Based on the gene expression profiles and/or protein expression profiles, patients are diagnosed with either Hodgkin lymphoma or non-Hodgkin lymphoma.

The expression data from these patient samples is then added to the database. In addition, clinical information regarding the patient and treatment course as well as clinical

outcome are also included in the database; thus, providing expression profiles for disease, disease stage, and outcome.

Microarray technology is also used to identify a course of treatment and as a drug discovery method. Normal and tumorigenic cells are treated with a known cancer drug (*e.g.*, tamoxifen) or a novel pharmacological agent. As described above, RNA or protein is isolated and then hybridized to a microarray containing normal and cancer cell genes or protein-capture agents. A comparison of the expression levels following treatment provides an expression profile of the particular drug indicating which genes or proteins are activated or deactivated by the drug. This information is also added to the database. The database thus contains information describing the gene expression profiles and/or protein expression profiles of normal and cancer cells, gene expression profiles and/or protein expression profiles of patient samples, gene expression profiles and/or protein expression profiles of patients undergoing treatment, and gene expression profiles and/or protein expression profiles of *in vitro* cell studies. This information is used to diagnose and classify a disease, select and monitor a treatment course, and identify a prognostic indicator.

Various modifications and variations of the described methods and systems of the invention will be apparent to those skilled in the art without departing from the scope and spirit of the invention. Although the invention has been described in connection with specific preferred embodiments, it should be understood that the invention as claimed should not be unduly limited to such specific embodiments. Indeed, various modifications of the described modes for carrying out the invention which are obvious to those skilled in molecular biology or related fields are intended to be within the scope of the following claims.

We claim:

1. An endothelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 48; SEQ ID NO: 63; SEQ ID NO: 70; SEQ ID NO: 82; SEQ ID NO: 94; and SEQ ID NO: 144.
2. A muscle cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group selected from the group consisting of SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 54; SEQ ID NO: 55; and SEQ ID NO: 69.
3. A primary cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 43; SEQ ID NO: 44; SEQ ID NO: 45; SEQ ID NO: 46; SEQ ID NO: 47; SEQ ID NO: 48; SEQ ID NO: 49; SEQ ID NO: 50; SEQ ID NO: 51; SEQ ID NO: 52; SEQ ID NO: 53; SEQ ID NO: 54; SEQ ID NO: 55; SEQ ID NO: 56; SEQ ID NO: 57; SEQ ID NO: 58; SEQ ID NO: 59; SEQ ID NO: 60; SEQ ID NO: 61; SEQ ID NO: 62; SEQ ID NO: 63; SEQ ID

NO: 64; SEQ ID NO: 65; SEQ ID NO: 66; SEQ ID NO: 67; SEQ ID NO: 68; SEQ ID NO: 69; SEQ ID NO: 70; SEQ ID NO: 71; SEQ ID NO: 72; SEQ ID NO: 73; SEQ ID NO: 74; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ ID NO: 78; SEQ ID NO: 79; SEQ ID NO: 80; SEQ ID NO: 81; SEQ ID NO: 82; SEQ ID NO: 83; SEQ ID NO: 84; SEQ ID NO: 85; SEQ ID NO: 86; SEQ ID NO: 87; SEQ ID NO: 88; SEQ ID NO: 89; SEQ ID NO: 90; SEQ ID NO: 91; SEQ ID NO: 92; SEQ ID NO: 93; SEQ ID NO: 94; SEQ ID NO: 95; SEQ ID NO: 96; SEQ ID NO: 97; SEQ ID NO: 98; SEQ ID NO: 99; SEQ ID NO: 100; SEQ ID NO: 101; SEQ ID NO: 102; SEQ ID NO: 103; SEQ ID NO: 104; SEQ ID NO: 105; SEQ ID NO: 106; SEQ ID NO: 107; SEQ ID NO: 108; SEQ ID NO: 109; SEQ ID NO: 110; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 113; SEQ ID NO: 114; SEQ ID NO: 115; SEQ ID NO: 116; SEQ ID NO: 118; SEQ ID NO: 119; SEQ ID NO: 120; SEQ ID NO: 121; SEQ ID NO: 122; SEQ ID NO: 123; SEQ ID NO: 124; SEQ ID NO: 125; SEQ ID NO: 126; SEQ ID NO: 127; SEQ ID NO: 128; SEQ ID NO: 129; SEQ ID NO: 130; SEQ ID NO: 131; SEQ ID NO: 132; SEQ ID NO: 133; SEQ ID NO: 134; SEQ ID NO: 135; SEQ ID NO: 136; SEQ ID NO: 137; SEQ ID NO: 138; SEQ ID NO: 139; SEQ ID NO: 140; SEQ ID NO: 141; SEQ ID NO: 142; SEQ ID NO: 143; SEQ ID NO: 144; SEQ ID NO: 145; SEQ ID NO: 146; SEQ ID NO: 147; SEQ ID NO: 148; SEQ ID NO: 149; SEQ ID NO: 150; SEQ ID NO: 151; SEQ ID NO: 152; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186.

4. An epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group selected from the group consisting of SEQ ID NO: 47; SEQ ID NO: 60; SEQ ID NO: 67; SEQ ID NO: 73; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ ID NO: 78; SEQ ID NO: 80; SEQ ID NO: 96; SEQ ID NO: 98; SEQ ID NO: 99; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 123; SEQ ID NO: 127; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155;

SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186.

5. A keratinocyte epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group selected from the group consisting of SEQ ID NO: 187; SEQ ID NO: 188; SEQ ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ ID NO: 192; SEQ ID NO: 193; SEQ ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ ID NO: 197; SEQ ID NO: 198; SEQ ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ ID NO: 202; SEQ ID NO: 203; SEQ ID NO: 204; SEQ ID NO: 205; SEQ ID NO: 206; SEQ ID NO: 207; SEQ ID NO: 208; SEQ ID NO: 209; SEQ ID NO: 210; and SEQ ID NO: 211.
6. A mammary epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group selected from the group consisting of SEQ ID NO: 78; SEQ ID NO: 212; SEQ ID NO: 213; SEQ ID NO: 216; SEQ ID NO: 225; SEQ ID NO: 226; SEQ ID NO: 227; SEQ ID NO: 239; SEQ ID NO: 271; SEQ ID NO: 285; and SEQ ID NO: 289.
7. A bronchial epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group selected from the group consisting of SEQ ID NO: 27; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 169; SEQ ID NO: 214; SEQ ID NO: 215; SEQ ID NO: 223; SEQ ID NO: 224; SEQ ID NO: 241; SEQ ID NO: 243; SEQ ID NO: 244; SEQ ID NO: 255; SEQ ID NO: 256; SEQ ID NO: 261; and SEQ ID NO: 314.

8. A prostate epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group selected from the group consisting of SEQ ID NO: 64; SEQ ID NO: 217; SEQ ID NO: 218; SEQ ID NO: 259; SEQ ID NO: 293; SEQ ID NO: 302; and SEQ ID NO: 320.
9. A renal cortical epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group selected from the group consisting of SEQ ID NO: 49; SEQ ID NO: 57; SEQ ID NO: 104; SEQ ID NO: 123; SEQ ID NO: 160; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 219; SEQ ID NO: 267; SEQ ID NO: 270; SEQ ID NO: 279; SEQ ID NO: 280; SEQ ID NO: 283; SEQ ID NO: 291; SEQ ID NO: 305; SEQ ID NO: 307; SEQ ID NO: 310; SEQ ID NO: 313; SEQ ID NO: 325; SEQ ID NO: 326; and SEQ ID NO: 327.
10. A renal proximal tubule epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group selected from the group consisting of SEQ ID NO: 106; SEQ ID NO: 138; SEQ ID NO: 158; SEQ ID NO: 228; SEQ ID NO: 236; SEQ ID NO: 242; SEQ ID NO: 250; SEQ ID NO: 258; SEQ ID NO: 260; SEQ ID NO: 262; SEQ ID NO: 266; SEQ ID NO: 272; SEQ ID NO: 273; SEQ ID NO: 274; SEQ ID NO: 275; SEQ ID NO: 276; SEQ ID NO: 278; SEQ ID NO: 284; SEQ ID NO: 288; SEQ ID NO: 295; SEQ ID NO: 296; SEQ ID NO: 297; SEQ ID NO: 299; SEQ ID NO: 300; SEQ ID NO: 301; SEQ ID NO: 306; SEQ ID NO: 308; SEQ ID NO: 309; SEQ ID NO: 311; SEQ ID NO: 316; SEQ ID NO: 318; SEQ ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 328; and SEQ ID NO: 329.
11. A small airway epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group selected from the group consisting of SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 183; SEQ ID NO: 220; SEQ ID NO: 221; SEQ ID NO: 222; SEQ ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ ID NO: 232; SEQ ID NO: 233; SEQ ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 237; SEQ ID NO: 238; SEQ ID NO: 240; SEQ ID NO: 245; SEQ ID NO: 246; SEQ ID NO: 247; SEQ ID

NO: 248; SEQ ID NO: 249; SEQ ID NO: 251; SEQ ID NO: 252; SEQ ID NO: 254; SEQ ID NO: 257; SEQ ID NO: 263; SEQ ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 268; SEQ ID NO: 269; SEQ ID NO: 270; SEQ ID NO: 277; SEQ ID NO: 281; SEQ ID NO: 282; SEQ ID NO: 286; SEQ ID NO: 287; SEQ ID NO: 290; SEQ ID NO: 294; SEQ ID NO: 298; SEQ ID NO: 303; SEQ ID NO: 312; SEQ ID NO: 315; SEQ ID NO: 317; and SEQ ID NO: 319.

12. A renal epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof selected from the group selected from the group consisting of SEQ ID NO: 37; SEQ ID NO: 253; SEQ ID NO: 304; SEQ ID NO: 323; and SEQ ID NO: 324.
13. A gene expression profile comprising one or more genes, wherein said gene expression profile is generated from a cell type selected from the group consisting of coronary artery endothelium, umbilical artery endothelium, umbilical vein endothelium, aortic endothelium, dermal microvascular endothelium, pulmonary artery endothelium, myometrium microvascular endothelium, keratinocyte epithelium, bronchial epithelium, mammary epithelium, prostate epithelium, renal cortical epithelium, renal proximal tubule epithelium, small airway epithelium, renal epithelium, umbilical artery smooth muscle, neonatal dermal fibroblast, pulmonary artery smooth muscle, dermal fibroblast, neural progenitor cells, skeletal muscle, astrocytes, aortic smooth muscle, mesangial cells, coronary artery smooth muscle, bronchial smooth muscle, uterine smooth muscle, lung fibroblast, osteoblasts, and prostate stromal cells.
14. A microarray comprising an endothelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 48; SEQ ID NO: 63; SEQ ID NO: 70; SEQ ID NO: 82; SEQ ID NO: 94; and SEQ ID NO: 144.

15. A microarray comprising muscle cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 54; SEQ ID NO: 55; and SEQ ID NO: 69.

16. A microarray comprising a primary cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 43; SEQ ID NO: 44; SEQ ID NO: 45; SEQ ID NO: 46; SEQ ID NO: 47; SEQ ID NO: 48; SEQ ID NO: 49; SEQ ID NO: 50; SEQ ID NO: 51; SEQ ID NO: 52; SEQ ID NO: 53; SEQ ID NO: 54; SEQ ID NO: 55; SEQ ID NO: 56; SEQ ID NO: 57; SEQ ID NO: 58; SEQ ID NO: 59; SEQ ID NO: 60; SEQ ID NO: 61; SEQ ID NO: 62; SEQ ID NO: 63; SEQ ID NO: 64; SEQ ID NO: 65; SEQ ID NO: 66; SEQ ID NO: 67; SEQ ID NO: 68; SEQ ID NO: 69; SEQ ID NO: 70; SEQ ID NO: 71; SEQ ID NO: 72; SEQ ID NO: 73; SEQ ID NO: 74; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ ID NO: 78; SEQ ID NO: 79; SEQ ID NO: 80; SEQ ID NO: 81; SEQ ID NO: 82; SEQ ID NO: 83; SEQ ID NO: 84; SEQ ID NO: 85; SEQ ID NO: 86; SEQ ID NO: 87; SEQ ID NO: 88; SEQ ID NO: 89; SEQ ID NO: 90; SEQ ID NO: 91; SEQ ID NO: 92; SEQ ID NO: 93; SEQ ID NO: 94; SEQ ID NO: 95; SEQ ID NO: 96; SEQ ID NO: 97; SEQ ID NO: 98;

SEQ ID NO: 99; SEQ ID NO: 100; SEQ ID NO: 101; SEQ ID NO: 102; SEQ ID NO: 103; SEQ ID NO: 104; SEQ ID NO: 105; SEQ ID NO: 106; SEQ ID NO: 107; SEQ ID NO: 108; SEQ ID NO: 109; SEQ ID NO: 110; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 113; SEQ ID NO: 114; SEQ ID NO: 115; SEQ ID NO: 116; SEQ ID NO: 118; SEQ ID NO: 119; SEQ ID NO: 120; SEQ ID NO: 121; SEQ ID NO: 122; SEQ ID NO: 123; SEQ ID NO: 124; SEQ ID NO: 125; SEQ ID NO: 126; SEQ ID NO: 127; SEQ ID NO: 128; SEQ ID NO: 129; SEQ ID NO: 130; SEQ ID NO: 131; SEQ ID NO: 132; SEQ ID NO: 133; SEQ ID NO: 134; SEQ ID NO: 135; SEQ ID NO: 136; SEQ ID NO: 137; SEQ ID NO: 138; SEQ ID NO: 139; SEQ ID NO: 140; SEQ ID NO: 141; SEQ ID NO: 142; SEQ ID NO: 143; SEQ ID NO: 144; SEQ ID NO: 145; SEQ ID NO: 146; SEQ ID NO: 147; SEQ ID NO: 148; SEQ ID NO: 149; SEQ ID NO: 150; SEQ ID NO: 151; SEQ ID NO: 152; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183; SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186.

17. A microarray comprising an epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 47; SEQ ID NO: 60; SEQ ID NO: 67; SEQ ID NO: 73; SEQ ID NO: 75; SEQ ID NO: 76; SEQ ID NO: 77; SEQ ID NO: 78; SEQ ID NO: 80; SEQ ID NO: 96; SEQ ID NO: 98; SEQ ID NO: 99; SEQ ID NO: 111; SEQ ID NO: 112; SEQ ID NO: 123; SEQ ID NO: 127; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 153; SEQ ID NO: 154; SEQ ID NO: 155; SEQ ID NO: 156; SEQ ID NO: 157; SEQ ID NO: 158; SEQ ID NO: 159; SEQ ID NO: 160; SEQ ID NO: 161; SEQ ID NO: 162; SEQ ID NO: 163; SEQ ID NO: 164; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 167; SEQ ID NO: 168; SEQ ID NO: 169; SEQ ID NO: 170; SEQ ID NO: 171; SEQ ID NO: 172; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 175; SEQ ID NO: 176; SEQ ID NO: 177; SEQ ID NO: 178; SEQ

ID NO: 179; SEQ ID NO: 180; SEQ ID NO: 181; SEQ ID NO: 182; SEQ ID NO: 183;
SEQ ID NO: 184; SEQ ID NO: 185; and SEQ ID NO: 186.

18. A microarray comprising a keratinocyte epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 187; SEQ ID NO: 188; SEQ ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ ID NO: 192; SEQ ID NO: 193; SEQ ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ ID NO: 197; SEQ ID NO: 198; SEQ ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ ID NO: 202; SEQ ID NO: 203; SEQ ID NO: 204; SEQ ID NO: 205; SEQ ID NO: 206; SEQ ID NO: 207; SEQ ID NO: 208; SEQ ID NO: 209; SEQ ID NO: 210; and SEQ ID NO: 211.
19. A microarray comprising a mammary epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 78; SEQ ID NO: 212; SEQ ID NO: 213; SEQ ID NO: 216; SEQ ID NO: 225; SEQ ID NO: 226; SEQ ID NO: 227; SEQ ID NO: 239; SEQ ID NO: 271; SEQ ID NO: 285; and SEQ ID NO: 289.
20. A microarray comprising a bronchial epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 27; SEQ ID NO: 131; SEQ ID NO: 150; SEQ ID NO: 169; SEQ ID NO: 214; SEQ ID NO: 215; SEQ ID NO: 223; SEQ ID NO: 224; SEQ ID NO: 241; SEQ ID NO: 243; SEQ ID NO: 244; SEQ ID NO: 255; SEQ ID NO: 256; SEQ ID NO: 261; and SEQ ID NO: 314.
21. A microarray comprising a prostate epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 64;

SEQ ID NO: 217; SEQ ID NO: 218; SEQ ID NO: 259; SEQ ID NO: 293; SEQ ID NO: 302; and SEQ ID NO: 320.

22. A microarray comprising a renal cortical epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 49; SEQ ID NO: 57; SEQ ID NO: 104; SEQ ID NO: 123; SEQ ID NO: 160; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 219; SEQ ID NO: 267; SEQ ID NO: 270; SEQ ID NO: 279; SEQ ID NO: 280; SEQ ID NO: 283; SEQ ID NO: 291; SEQ ID NO: 305; SEQ ID NO: 307; SEQ ID NO: 310; SEQ ID NO: 313; SEQ ID NO: 325; SEQ ID NO: 326; and SEQ ID NO: 327.
23. A microarray comprising renal proximal tubule epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 106; SEQ ID NO: 138; SEQ ID NO: 158; SEQ ID NO: 228; SEQ ID NO: 236; SEQ ID NO: 242; SEQ ID NO: 250; SEQ ID NO: 258; SEQ ID NO: 260; SEQ ID NO: 262; SEQ ID NO: 266; SEQ ID NO: 272; SEQ ID NO: 273; SEQ ID NO: 274; SEQ ID NO: 275; SEQ ID NO: 276; SEQ ID NO: 278; SEQ ID NO: 284; SEQ ID NO: 288; SEQ ID NO: 295; SEQ ID NO: 296; SEQ ID NO: 297; SEQ ID NO: 299; SEQ ID NO: 300; SEQ ID NO: 301; SEQ ID NO: 306; SEQ ID NO: 308; SEQ ID NO: 309; SEQ ID NO: 311; SEQ ID NO: 316; SEQ ID NO: 318; SEQ ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 328; and SEQ ID NO: 329.
24. A microarray comprising a small airway epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 183; SEQ ID NO: 220; SEQ ID NO: 221; SEQ ID NO: 222; SEQ ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ ID NO: 232; SEQ ID NO: 233; SEQ ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 237; SEQ ID NO: 238; SEQ ID NO: 240; SEQ ID NO: 245; SEQ ID NO: 246; SEQ ID NO: 247; SEQ

ID NO: 248; SEQ ID NO: 249; SEQ ID NO: 251; SEQ ID NO: 252; SEQ ID NO: 254; SEQ ID NO: 257; SEQ ID NO: 263; SEQ ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 268; SEQ ID NO: 269; SEQ ID NO: 270; SEQ ID NO: 277; SEQ ID NO: 281; SEQ ID NO: 282; SEQ ID NO: 286; SEQ ID NO: 287; SEQ ID NO: 290; SEQ ID NO: 294; SEQ ID NO: 298; SEQ ID NO: 303; SEQ ID NO: 312; SEQ ID NO: 315; SEQ ID NO: 317; and SEQ ID NO: 319.

25. A microarray comprising a renal epithelial cell gene expression profile comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 37; SEQ ID NO: 253; SEQ ID NO: 304; SEQ ID NO: 323; and SEQ ID NO: 324.
26. A microarray comprising one or more nucleic acid sequences substantially homologous to a nucleic acid sequence or complementary sequence thereof, or portions of said nucleic acid sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 27; SEQ ID NO: 37; SEQ ID NO: 49; SEQ ID NO: 57; SEQ ID NO: 64; SEQ ID NO: 70; SEQ ID NO: 78; SEQ ID NO: 104; SEQ ID NO: 106; SEQ ID NO: 123; SEQ ID NO: 131; SEQ ID NO: 138; SEQ ID NO: 150; SEQ ID NO: 158; SEQ ID NO: 160; SEQ ID NO: 165; SEQ ID NO: 166; SEQ ID NO: 169; SEQ ID NO: 173; SEQ ID NO: 174; SEQ ID NO: 183; SEQ ID NO: 187; SEQ ID NO: 188; SEQ ID NO: 189; SEQ ID NO: 190; SEQ ID NO: 191; SEQ ID NO: 192; SEQ ID NO: 193; SEQ ID NO: 194; SEQ ID NO: 195; SEQ ID NO: 196; SEQ ID NO: 197; SEQ ID NO: 198; SEQ ID NO: 199; SEQ ID NO: 200; SEQ ID NO: 201; SEQ ID NO: 202; SEQ ID NO: 203; SEQ ID NO: 204; SEQ ID NO: 205; SEQ ID NO: 206; SEQ ID NO: 207; SEQ ID NO: 208; SEQ ID NO: 209; SEQ ID NO: 210; SEQ ID NO: 211; SEQ ID NO: 212; SEQ ID NO: 213; SEQ ID NO: 214; SEQ ID NO: 215; SEQ ID NO: 216; SEQ ID NO: 217; SEQ ID NO: 218; SEQ ID NO: 219; SEQ ID NO: 220; SEQ ID NO: 221; SEQ ID NO: 222; SEQ ID NO: 223; SEQ ID NO: 224; SEQ ID NO: 225; SEQ ID NO: 226; SEQ ID NO: 227; SEQ ID NO: 228; SEQ ID NO: 229; SEQ ID NO: 230; SEQ ID NO: 231; SEQ ID NO: 232; SEQ ID NO: 233; SEQ ID NO: 234; SEQ ID NO: 235; SEQ ID NO: 236; SEQ ID NO: 237; SEQ ID NO: 238; SEQ ID NO: 239; SEQ ID NO: 240; SEQ ID NO: 241; SEQ ID NO: 242; SEQ ID NO: 243; SEQ ID NO: 244; SEQ ID NO: 245; SEQ ID NO: 246; SEQ ID NO: 247; SEQ ID NO: 248; SEQ ID NO: 249; SEQ ID NO: 250; SEQ ID NO: 251;

SEQ ID NO: 252; SEQ ID NO: 253; SEQ ID NO: 254; SEQ ID NO: 255; SEQ ID NO: 256; SEQ ID NO: 257; SEQ ID NO: 258; SEQ ID NO: 259; SEQ ID NO: 260; SEQ ID NO: 261; SEQ ID NO: 262; SEQ ID NO: 263; SEQ ID NO: 264; SEQ ID NO: 265; SEQ ID NO: 266; SEQ ID NO: 267; SEQ ID NO: 268; SEQ ID NO: 269; SEQ ID NO: 270; SEQ ID NO: 271; SEQ ID NO: 272; SEQ ID NO: 273; SEQ ID NO: 274; SEQ ID NO: 275; SEQ ID NO: 276; SEQ ID NO: 277; SEQ ID NO: 278; SEQ ID NO: 279; SEQ ID NO: 280; SEQ ID NO: 281; SEQ ID NO: 282; SEQ ID NO: 283; SEQ ID NO: 284; SEQ ID NO: 285; SEQ ID NO: 286; SEQ ID NO: 287; SEQ ID NO: 288; SEQ ID NO: 289; SEQ ID NO: 290; SEQ ID NO: 291; SEQ ID NO: 293; SEQ ID NO: 294; SEQ ID NO: 295; SEQ ID NO: 296; SEQ ID NO: 297; SEQ ID NO: 298; SEQ ID NO: 299; SEQ ID NO: 300; SEQ ID NO: 301; SEQ ID NO: 302; SEQ ID NO: 303; SEQ ID NO: 304; SEQ ID NO: 305; SEQ ID NO: 306; SEQ ID NO: 307; SEQ ID NO: 308; SEQ ID NO: 309; SEQ ID NO: 310; SEQ ID NO: 311; SEQ ID NO: 312; SEQ ID NO: 313; SEQ ID NO: 314; SEQ ID NO: 315; SEQ ID NO: 316; SEQ ID NO: 317; SEQ ID NO: 318; SEQ ID NO: 320; SEQ ID NO: 321; SEQ ID NO: 322; SEQ ID NO: 323; SEQ ID NO: 324; SEQ ID NO: 325; SEQ ID NO: 326; SEQ ID NO: 327; SEQ ID NO: 328; and SEQ ID NO: 329.

27. A microarray comprising a gene expression profile comprising one or more genes or oligonucleotide probes obtained therefrom, wherein said gene expression profile is generated from a cell type selected from the group comprising coronary artery endothelium, umbilical artery endothelium, umbilical vein endothelium, aortic endothelium, dermal microvascular endothelium, pulmonary artery endothelium, myometrium microvascular endothelium, keratinocyte epithelium, bronchial epithelium, mammary epithelium, prostate epithelium, renal cortical epithelium, renal proximal tubule epithelium, small airway epithelium, renal epithelium, umbilical artery smooth muscle, neonatal dermal fibroblast, pulmonary artery smooth muscle, dermal fibroblast, neural progenitor cells, skeletal muscle, astrocytes, aortic smooth muscle, mesangial cells, coronary artery smooth muscle, bronchial smooth muscle, uterine smooth muscle, lung fibroblast, osteoblasts, and prostate stromal cells.
28. A method of determining the level of RNA expression for a sample comprising the steps of:

determining the level of RNA expression for an RNA sample, wherein said RNA sample is amplified, fluorescently labeled, and hybridized to a microarray containing a plurality of nucleic acid sequences, and wherein said microarray is scanned for fluorescence;

normalizing said expression level using an algorithm; and

scoring said RNA sample against a gene expression profile database.

29. The method of claim 28, wherein said RNA sample is obtained from a patient.

30. The method of claim 29, wherein said RNA sample is selected from the group consisting of blood, urine, amniotic fluid, plasma, semen, bone marrow, and tissue biopsy.

31. The method of claim 28, wherein said algorithm is the MaxCor algorithm.

32. The method of claim 28, wherein said algorithm is the Mean Log Ratio algorithm.

33. A method for constructing a gene expression profile comprising the steps of:

hybridizing prepared RNA samples to at least one microarray containing a plurality of nucleic acid sequences representing human genes;

obtaining an expression level for each of said plurality of nucleic acid sequences representing human genes on each of said at least one microarrays; and

normalizing said expression level for each of said plurality of nucleic acid sequences representing human genes on each of said at least one microarrays to control standards.

34. The method of claim 33 further comprising the steps of:

applying an algorithm to each of said normalized gene expression levels;

performing a correlation analysis for all of said normalized gene expression microarrays within a group of samples;

establishing a gene expression profile; and

validating the gene expression profile.

35. The method of claim 34, wherein said algorithm is the MaxCor algorithm.

36. The method of claim 35, wherein applying said MaxCor algorithm to each of said normalized gene expression levels assigns a numeric value to each gene represented on said at least one microarray based upon expression level.
37. The method of claim 36, wherein said numeric value is a number between the range of (-1,+1).
38. The method of claim 37, wherein a negative value of said numeric value represents a gene with relatively lower expression.
39. The method of claim 37, wherein a zero value of said numeric value represents no relative gene expression difference.
40. The method of claim 37, wherein a positive value of said numeric value represents a gene with relatively higher expression.
41. The method of claim 36, wherein said numeric value is a number between the range of (-2,+2).
42. The method of claim 41, wherein a negative value of said numeric value represents a gene with relatively lower expression.
43. The method of claim 41, wherein a zero value of said numeric value represents no relative gene expression difference.
44. The method of claim 41, wherein a positive value of said numeric value represents a gene with relatively higher expression.
45. The method of claim 34, wherein said algorithm is the Mean Log Ratio algorithm.
46. The method of claim 45, wherein applying said Mean Log Ratio algorithm to each of said gene expression microarrays assigns a numeric value to each gene contained on said microarray based upon expression level.

47. The method of claim 46, wherein said numeric value is between the range of $(-1,+1)$.
48. The method of claim 47, wherein a negative value of said numeric value represents a gene with relatively lower expression.
49. The method of claim 47, wherein a zero value of said numeric value represents no relative gene expression difference.
50. The method of claim 47, wherein a positive value of said numeric value represents a gene with relatively higher expression.
51. The method of claim 46, wherein said numeric value is a number between the range of $(-2,+2)$.
52. The method of claim 51, wherein a negative value of said numeric value represents a gene with relatively lower expression.
53. The method of claim 51, wherein a zero value of said numeric value represents no relative gene expression difference.
54. The method of claim 51, wherein a positive value of said numeric value represents a gene with relatively higher expression.
55. A method, in a computer system, for constructing and analyzing a gene expression profile comprising the steps of:
- inputting gene expression data for each of a plurality of genes;
 - normalizing expression data by transforming said data into log ratio values;
 - filtering weak differential values;
 - applying an algorithm to each of said normalized gene expression values;
 - performing a classification analysis for all of said normalized gene expression values;
 - establishing a gene expression profile; and
 - validating the gene expression profile.
56. The method of claim 55, wherein said algorithm is the MaxCor algorithm.

57. The method of claim 55, wherein said algorithm is the Mean Log Ratio algorithm.
58. A computer program for constructing and analyzing a gene expression profile comprising:
- computer code that receives as input gene expression data for a plurality of genes;
 - computer code that normalizes expression data by transforming said data into log ratio values;
 - computer code that applies an algorithm to each of said normalized gene expression values;
 - computer code that performs a correlation analysis for all of said normalized gene expression values;
 - computer code that establishes and validates the gene expression profile; and
 - computer readable medium that stores computer code.
59. The computer program of claim 58, wherein said algorithm is the MaxCor algorithm.
60. The computer program of claim 58, wherein said algorithm is the Mean Log Ratio algorithm.
61. A method for determining the phenotype of a cell comprising the steps of
- applying an algorithm to extract a gene expression profile from gene expression data generated from said cell; and
 - matching said gene expression profile to a gene expression profile generated from a cell of known phenotype.
62. The method of claim 61, wherein said algorithm is the MaxCor algorithm.
63. The method of claim 61, wherein said algorithm is the Mean Log Ratio algorithm.
64. The method of claim 61, wherein said applying step comprises setting a cutoff value for expression relative to normalized values, wherein said cutoff value is at least about two-fold induction above the normalized values.

65. The method of claim 61, wherein said matching step is performed using a database comprising one or more gene expression profiles generated from cells of known phenotype.
66. A method for distinguishing cell types comprising the step of matching a gene expression profile generated from a biological sample using an algorithm to a known gene expression profile of a specific cell type.
67. The method of claim 66, wherein said algorithm is the MaxCor algorithm.
68. The method of claim 66, wherein said algorithm is the Mean Log Ratio algorithm.
69. The method of claim 66, wherein said specific cell type is selected from the group consisting of coronary artery endothelium, umbilical artery endothelium, umbilical vein endothelium, aortic endothelium, dermal microvascular endothelium, pulmonary artery endothelium, myometrium microvascular endothelium, keratinocyte epithelium, bronchial epithelium, mammary epithelium, prostate epithelium, renal cortical epithelium, renal proximal tubule epithelium, small airway epithelium, renal epithelium, umbilical artery smooth muscle, neonatal dermal fibroblast, pulmonary artery smooth muscle, dermal fibroblast, neural progenitor cells, skeletal muscle, astrocytes, aortic smooth muscle, mesangial cells, coronary artery smooth muscle, bronchial smooth muscle, uterine smooth muscle, lung fibroblast, osteoblasts, and prostate stromal cells.
70. A microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile of claim 1.
71. A microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile of claim 2.
72. A microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile of claim 3.

73. A microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile of claim 4
74. A microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile of claim 5.
75. A microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile of claim 6.
76. A microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile of claim 7.
77. A microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile of claim 8.
78. A microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile of claim 9.
79. A microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile of claim 10.
80. A microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile of claim 11.

81. A microarray comprising one or more protein-capture agents that specifically bind to all or a portion of one or more of the proteins encoded by the genes comprising the gene expression profile of claim 12.
82. A method for determining the phenotype of a cell comprising the steps of
 applying an algorithm to extract a protein expression profile from protein expression data generated from said cell; and
 matching said protein expression profile to a protein expression profile generated from a cell of known phenotype.
83. The method of claim 82, wherein said algorithm is the MaxCor algorithm.
84. The method of claim 82, wherein said algorithm is the Mean Log Ratio algorithm.
85. The method of claim 82, wherein said applying step comprises setting a cutoff value for expression relative to normalized values, wherein said cutoff value is at least about two-fold induction above the normalized values.
86. The method of claim 82, wherein said matching step is performed using a database comprising one or more protein expression profiles generated from cells of known phenotype.
87. A method for distinguishing cell types comprising the step of matching a protein expression profile generated from a biological sample using an algorithm to a known protein expression profile of a specific cell type.
88. The method of claim 87, wherein said algorithm is the MaxCor algorithm.
89. The method of claim 87, wherein said algorithm is the Mean Log Ratio algorithm.
90. The method of claim 87, wherein said specific cell type is selected from the group consisting of coronary artery endothelium, umbilical artery endothelium, umbilical vein endothelium, aortic endothelium, dermal microvascular endothelium, pulmonary artery endothelium, myometrium microvascular endothelium, keratinocyte epithelium, bronchial

epithelium, mammary epithelium, prostate epithelium, renal cortical epithelium, renal proximal tubule epithelium, small airway epithelium, renal epithelium, umbilical artery smooth muscle, neonatal dermal fibroblast, pulmonary artery smooth muscle, dermal fibroblast, neural progenitor cells, skeletal muscle, astrocytes, aortic smooth muscle, mesangial cells, coronary artery smooth muscle, bronchial smooth muscle, uterine smooth muscle, lung fibroblast, osteoblasts, and prostate stromal cells.

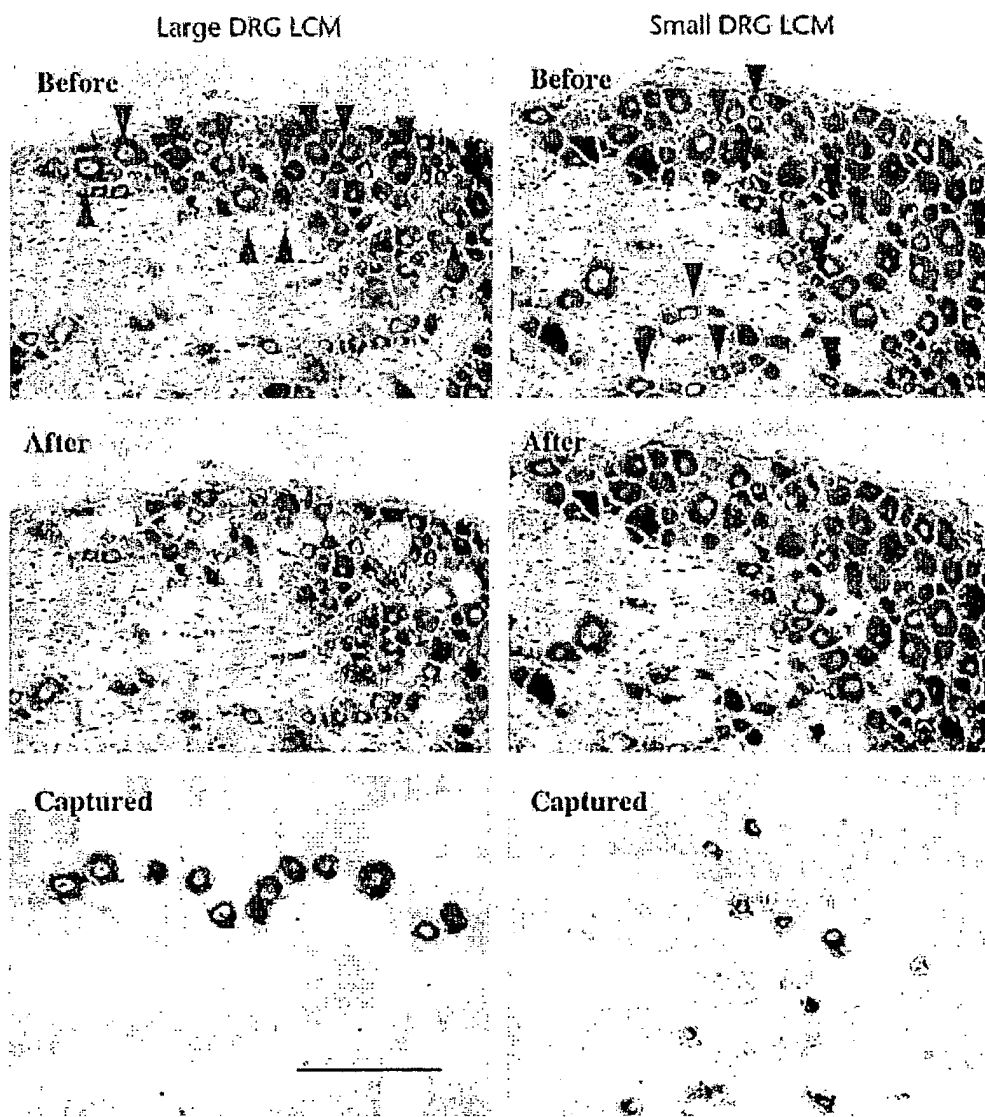


Figure 1

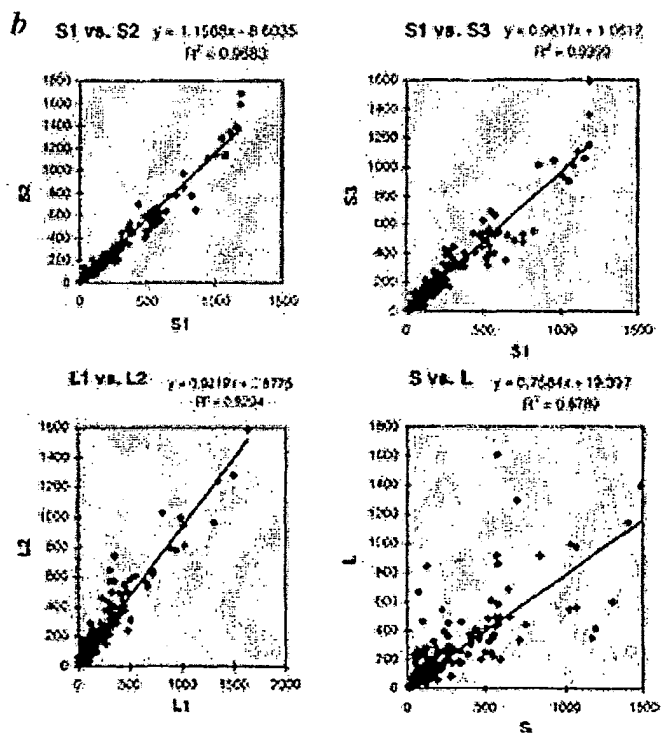
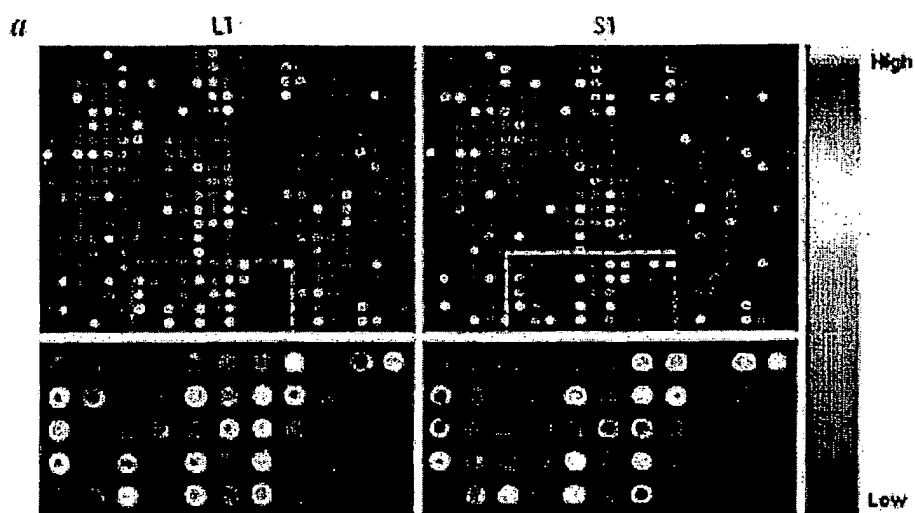


Figure 2

| PRI ID | GB | Description | Mean±S.E.M. (Small) | Mean±S.E.M. (Large) | Ratio | p |
|--------|----------|---|------------------------|------------------------|-------|--------|
| 192294 | AF059030 | <i>Rattus norvegicus</i> voltage-gated Na channel alpha subunit (NaN) | 161.34±20.07 | 51.3±12.99* | 3.15 | 0.0005 |
| 192195 | D86642 | Rat mRNA for FK506-binding protein | 496.33±40.11 | 158.8±35.13 | 3.13 | 0.0005 |
| 192207 | U16655 | <i>Rattus norvegicus</i> phospholipase C delta-4 | 146.33±10.03 | 53.06±4.23 | 2.76 | 0.0005 |
| 192163 | X90651 | <i>Rattus norvegicus</i> P2X3 receptor | 390.28±10.4 | 164.81±26.22 | 2.37 | 0.0005 |
| 191858 | S69874 | C-FABP: cutaneous fatty acid-binding protein (rat) | 448.26±30.01 | 196.97±18.68 | 2.28 | 0.0005 |
| 192139 | D45249 | Rat proteasome activator rPA28 subunit alpha | 104.46±5.24 | 47.74±6.97* | 2.19 | 0.0005 |
| 192178 | L12447 | <i>Mus musculus</i> insulin-like growth factor binding protein 5 | 288.97±8.47 | 141.67±5.61 | 2.04 | 0.0005 |
| 192306 | X77953 | <i>Rattus norvegicus</i> ribosomal protein S15a. | 415.77±54.08 | 204.19±25.03 | 2.04 | 0.005 |
| 192129 | M38188 | Human unknown protein from clone pHGR74 | 114.72±10.98 | 57.47±11.64* | 2.00 | 0.0025 |
| 192339 | | Novel | 83.94±6.26 | 42.42±7.75* | 1.98 | 0.001 |
| 191857 | L00111 | Rat CGRP | 900.1±45.83 | 459.99±35.39 | 1.96 | 0.0005 |
| 192203 | AF059486 | <i>Mus musculus</i> putative actin-binding protein DOC6 | 861.16±32.58 | 448.32±68.77 | 1.92 | 0.0005 |
| 192351 | U25844 | <i>Mus musculus</i> serine proteinase inhibitor (SPI3) | 271.95±30.44 | 142.81±6.93 | 1.90 | 0.0025 |
| 191837 | M29472 | <i>Rattus norvegicus</i> mevalonate kinase | 94.44±9.63 | 51.83±5.95* | 1.82 | 0.0025 |
| 191628 | | Novel | 635.92±73.01 | 363.86±11.53 | 1.75 | 0.005 |
| 192175 | | Novel | 181.28±13.23 | 105.36±10.39 | 1.72 | 0.0005 |
| 192284 | | Novel | 188.28±13 | 110.53±7.27 | 1.70 | 0.0005 |
| 192330 | Y10386 | MMC1INH <i>Mus musculus</i> C1 inhibitor | 134.88±11.01 | 79.3±5.51 | 1.70 | 0.0005 |
| 192199 | D42137 | Rat annexin V gene | 439.57±13.62 | 265.21±14.97 | 1.66 | 0.0005 |
| 192011 | M98194 | Rat extracellular signal-regulated kinase 1 | 319.35±32.79 | 194.88±6.83 | 1.64 | 0.005 |
| 192206 | U59673 | <i>Rattus norvegicus</i> 5HT3 receptor | 139.96±4.07 | 85.48±6.17 | 1.64 | 0.0005 |
| 192167 | U23146 | <i>Rattus norvegicus</i> mitogenic regulation SseCKS | 456.44±13.34 | 300.71±23.25 | 1.52 | 0.0005 |
| 191848 | M93056 | Human monocyte/neutrophil elastase inhibitor | 125.16±14.75 | 82.56±15.38 | 1.52 | 0.05 |
| 192309 | | Novel | 463.17±45.37 | 308.05±25.45 | 1.50 | 0.01 |

Figure 3

| PRI ID | GB | Description | Mean±S.E.M. (Small) | Mean±S.E.M. (Large) | Ratio | p |
|--------|--------|---|------------------------|------------------------|-------|--------|
| 192393 | M25638 | Rat smallest neurofilament protein (NF-L) | 63.3±6.12 | 551.56±34.94 | 8.71 | 0.0005 |
| 191624 | M14656 | Rat osteopontin | 53.4±4.11* | 218.52±22.81 | 4.09 | 0.0005 |
| 192157 | J04517 | Rat high molecular weight neurofilament (NF-H) | 475.86±18.59 | 1319.77±50.3 | 2.77 | 0.0005 |
| 192282 | Z12152 | <i>Rattus norvegicus</i> neurofilament protein middle | 75.93±3.75 | 206.55±9.92 | 2.72 | 0.0005 |
| 192378 | D87445 | Human KIAA0256 | 30.26±2.66* | 77.42±17.52 | 2.56 | 0.025 |
| 192283 | | Novel | 50.9±3.45* | 128.56±6.86 | 2.53 | 0.0005 |
| 192125 | V00681 | <i>Rattus norvegicus</i> mitochondrial genes for 16S rRNA, tRNA | 186.5±14.61 | 445.82±23.95 | 2.39 | 0.0005 |
| 191851 | X51396 | Mouse MAP1B microtubule-associated protein | 90.84±5.91 | 215.55±21.35 | 2.37 | 0.0025 |
| 192424 | M91808 | <i>Rattus norvegicus</i> sodium channel beta-1 | 83.99±7.93 | 194.88±20.61 | 2.32 | 0.0025 |
| 191862 | S67755 | hsp 27:heat shock protein 27 (Sprague-Dawley rats) | 144.74±10.14 | 265.94±19.44 | 1.84 | 0.0005 |
| 192016 | L10426 | <i>Mus musculus</i> ets-related protein 81 (ER81) | 43.85±1.89* | 80.04±7.16 | 1.83 | 0.0025 |
| 192228 | | Novel | 28.9±1.11* | 52±3.41 | 1.80 | 0.0005 |
| 192411 | M21551 | Human neuromedin B | 57.62±5.56* | 97.18±6.61 | 1.69 | 0.0005 |
| 192422 | | Novel | 110.06±11.78 | 168.52±12.14 | 1.53 | 0.0025 |

Figure 4

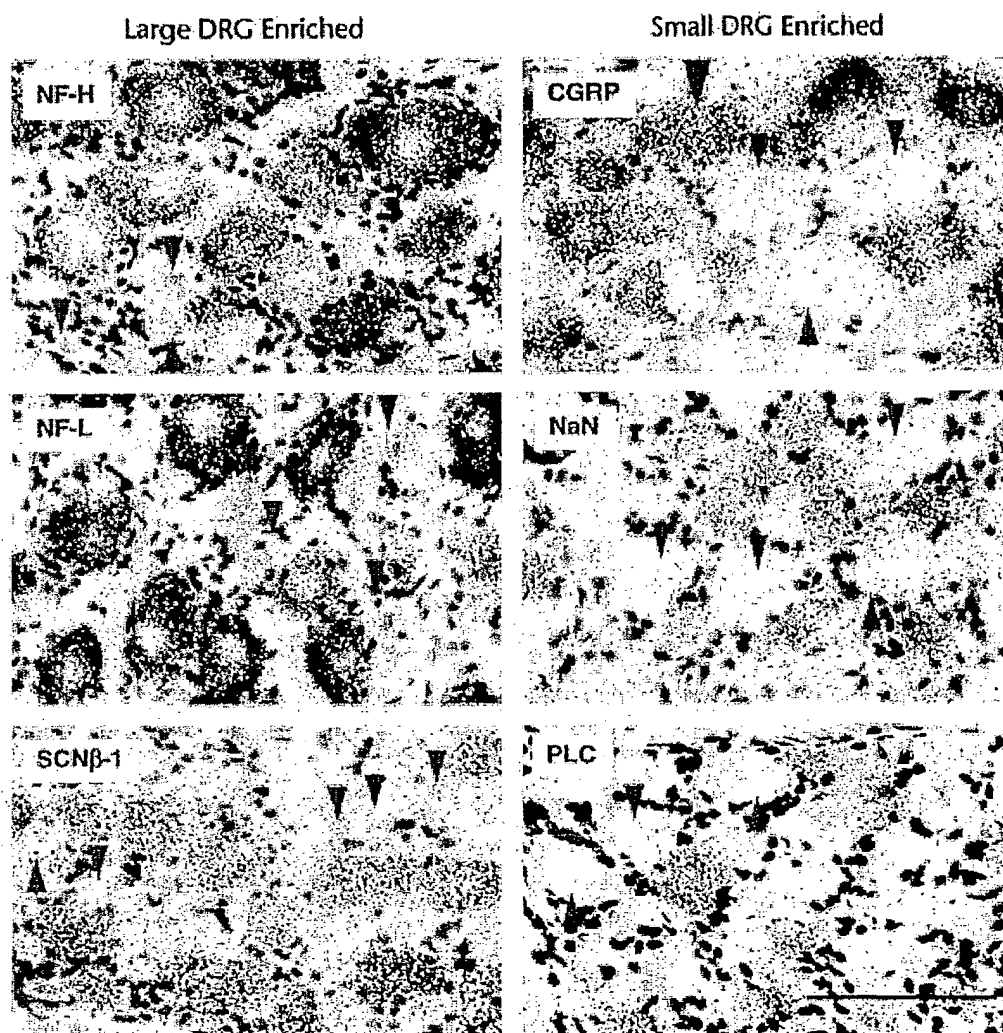


Figure 5

| Clone ID | GB | Description | Small DRG | | Large DRG | |
|----------|----------|---|-----------|-----------|-----------|-----------|
| | | | Intensity | % Labeled | Intensity | % Labeled |
| 192393 | M25638 | Rat smallest neurofilament protein (NF-L) | ± | 100% | +++ | 100% |
| 192157 | J04517 | Rat high molecular weight neurofilament (NF-H) | ± / - | 21.40% | +++ | 98.60% |
| 192424 | M91808 | <i>Rattus norvegicus</i> sodium channel beta-1 | ± / - | 10% | ++ | 96.30% |
| 192273 | M13501 | Rat liver fatty acid binding protein | + / ++ | 62.20% | + / - | 1% |
| 192294 | AF059030 | <i>Rattus norvegicus</i> voltage-gated Na channel (NaN) | ++ / + | 96.70% | + / - | 4.20% |
| 192199 | D42137 | Rat annexin V gene | + / ++ | 95.00% | + / ++ | 74.00% |
| 192207 | U16655 | <i>Rattus norvegicus</i> phospholipase C delta-4 | ++ | 42.20% | - | 0% |
| 191857 | L00111 | Rat CGRP | +++ / ++ | 83.70% | ++ / - | 9.40% |

Figure 6

| Vector | Primary Cell | Classification |
|--------|----------------------------------|----------------|
| 1 | Coronary artery endothelial | Endothelial |
| 2 | Umbilical artery endothelial | Endothelial |
| 3 | Umbilical vein endothelial | Endothelial |
| 4 | Aortic endothelial | Endothelial |
| 5 | Dermal microvascular endothelial | Endothelial |
| 6 | Pulmonary artery endothelial | Endothelial |
| 7 | Myometrium microvascular | Endothelial |
| 8 | Keratinocyte epidermal | Epithelial |
| 9 | Bronchial epithelial | Epithelial |
| 10 | Mammary epithelial | Epithelial |
| 11 | Prostate epithelial | Epithelial |
| 12 | Renal cortical epithelial | Epithelial |
| 13 | Renal proximal tubule epithelial | Epithelial |
| 14 | Small airway epithelial | Epithelial |
| 15 | Renal epithelial | Epithelial |
| 16 | Umbilical artery smooth muscle | Muscle |
| 17 | Neonatal dermal fibroblast | Muscle |
| 18 | Pulmonary artery smooth muscle | Muscle |
| 19 | Dermal fibroblast | Muscle |
| 20 | Neural progenitor cell | Muscle |
| 21 | Skeletal muscle | Muscle |
| 22 | Astrocyte | Muscle |
| 23 | Aortic smooth muscle | Muscle |
| 24 | Mesangial cell | Muscle |
| 25 | Coronary artery smooth muscle | Muscle |
| 26 | Bronchial smooth muscle | Muscle |
| 27 | Uterine smooth muscle | Muscle |
| 28 | Lung fibroblast | Muscle |
| 29 | Osteoblast | Muscle |
| 30 | Prostate stromal cell | Muscle |

Figure 7

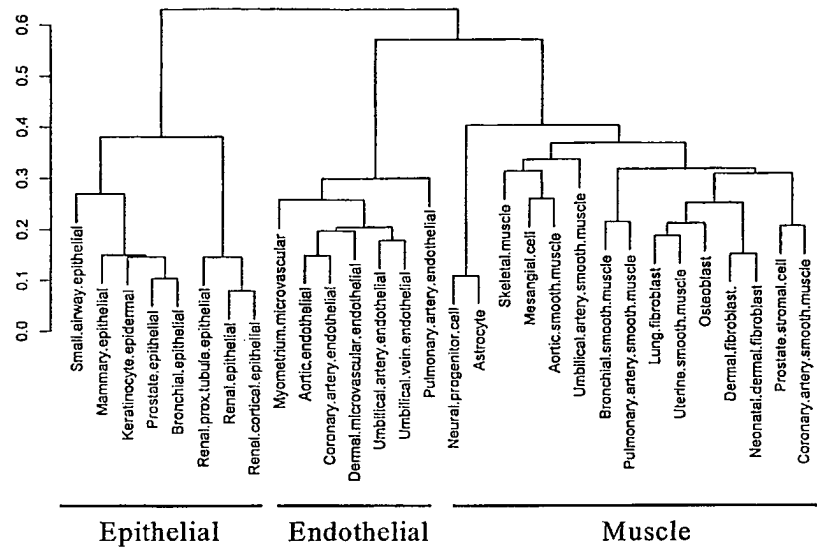


Figure 8

Primary Cell Gene Expression Profile

| Seq. Source | Accession | Muscle Signature | | | p-value | Source Description |
|-------------|-----------|-----------------------|----------------------|------------------|----------|--|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| GB | J03278 | -0.41 | -0.40 | 0.81 | 0.000011 | Human platelet-derived growth factor (PDGF) receptor mRNA, complete cds |
| GB | U52165 | 0.68 | -0.48 | -0.20 | 0.000013 | EST: AA150416 z105b02.s1 Soares_pregnant_uterus_NbHPU H |
| GB | W49672 | -0.15 | -0.19 | 0.34 | 0.000016 | EST: Wingless-type MMTV integration site 5A, human homolog |
| INCYTE | 3486371H1 | 0.19 | 0.48 | -0.67 | 0.000016 | EPIGN0T01 L24893 g529405 PO; myelin protein zero gb103prip 14 -1 |
| GB | U16811 | 0.03 | 0.23 | -0.26 | 0.000017 | Human Bak mRNA, complete cds. |
| GB | K01918 | 0.57 | -0.16 | -0.42 | 0.000022 | Human c-sis proto-oncogene for platelet-derived growth factor, exon 1 and flanks. |
| INCYTE | 1227785H1 | -0.32 | 1.07 | -0.75 | 0.000023 | AB000714 AB000714 Homo sapiens hrVP1 mRNA for RVP1, complete cds. Blastn P. 0.029 |
| GB | AA293050 | 0.09 | 0.34 | -0.42 | 0.000025 | JNK ACTIVATING KINASE 1 |
| GB | R09836 | 0.31 | 0.01 | -0.32 | 0.000025 | EST: Weakly similar to K04G11.4 [C.elegans] |
| GB | R06417 | 0.01 | 0.66 | -0.68 | 0.000025 | Junction plakoglobin |
| GB | AA243828 | -0.17 | -0.51 | 0.68 | 0.000027 | H.sapiens mRNA for receptor protein tyrosine kinase |
| GB | M11749 | -0.54 | -0.50 | 1.04 | 0.000028 | Human Thy-1 glycoprotein gene, complete cds. |
| INCYTE | 1321982H1 | 0.50 | -0.07 | -0.43 | 0.000028 | BLADNOT04 AF009225 g2327068 Human IkB kinase alpha subunit (IKK alpha gb104prip 90 -52 |
| INCYTE | 285478CA2 | 0.85 | -0.40 | -0.45 | 0.000028 | EOSIHET02 g1296608 Human mRNA for chemokine CC-2 and CC-1. gb96prip 32 -74 |
| INCYTE | 547531H1 | -0.03 | 0.36 | -0.33 | 0.000028 | U36445 Bos taurus calcium-activated chloride channel mRNA, complete cds |
| GB | AA521243 | 0.49 | -0.36 | -0.13 | 0.000029 | PUTATIVE 60S RIBOSOMAL PROTEIN |
| GB | U46005 | 0.52 | 0.16 | -0.68 | 0.000029 | Human MDC15 mRNA, complete cds. |
| GB | Z74616 | -0.71 | -0.74 | 1.45 | 0.000030 | H.sapiens mRNA for prepro-alpha2(I) collagen. |
| GB | H96850 | 0.38 | 0.26 | -0.64 | 0.000031 | Human mRNA for KIAA0115 gene, complete cds |
| INCYTE | 2997284H1 | 0.38 | 0.50 | -0.88 | 0.000033 | OVARTUT07 D30785 g1648847 Mouse mRNA for neuropsin, complete cds. gb104rod 41 -24 |
| GB | AA488073 | 0.02 | 0.41 | -0.43 | 0.000035 | Mucin 1, transmembrane |

Figure 9a

Primary Cell Gene Expression Profile

| Seq Source | Accession | Muscle Signature | | | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|---|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| GB | AA055193 | 0.12 | 0.32 | -0.44 | 0.000035 | EST: Weakly similar to No definition line found [C.elegans] |
| GB | X63368 | -0.25 | -0.08 | 0.32 | 0.000036 | H.sapiens HSJ1 mRNA |
| GB | AA435938 | -0.19 | -0.16 | 0.35 | 0.000038 | EST: zu01a08.s1 Soares_testis_NHT Homo sapiens cDNA clone 730550 3' similar to TR:G817957 G817957 GLYCINE |
| INCYTE | 1726828F6 | -0.07 | -0.20 | 0.27 | 0.000038 | EST: PROSNOT14 |
| GB | X00663 | -0.29 | 0.37 | -0.08 | 0.000039 | Human mRNA fragment for epidermal growth factor (EGF) receptor |
| GB | U09278 | -0.30 | -0.30 | 0.61 | 0.000039 | Human fibroblast activation protein mRNA, complete cds. |
| GB | H40103 | -0.20 | -0.15 | 0.34 | 0.000039 | EST: yn85c06.s1 Soares adult brain N2b5HB55Y Homo sapiens cDNA clone 175210 3', mRNA sequence |
| GB | L41147 | -0.04 | -0.07 | 0.12 | 0.000040 | Homo sapiens 5-HT6 serotonin receptor mRNA, complete cds |
| GB | M32977 | -0.52 | 0.51 | 0.01 | 0.000042 | Human heparin-binding vascular endothelial growth factor (VEGF) mRNA, complete cds |
| INCYTE | 3014785H1 | -0.21 | -0.21 | 0.42 | 0.000043 | MUSCNOT07 M33210 g532591 Human colony stimulating factor 1 recept gb106pri 100 -71 |
| INCYTE | 4872203H1 | -0.35 | 1.04 | -0.69 | 0.000043 | EST |
| INCYTE | 3985758H1 | 0.42 | 0.09 | -0.52 | 0.000044 | EST |
| INCYTE | 853668H1 | -0.33 | -0.12 | 0.45 | 0.000045 | NGANNOT01 U78192 g1688304 Human Edg-2 receptor mRNA, complete cds. gb104pri 67 -35 |
| GB | U96113 | 0.12 | 0.10 | -0.22 | 0.000047 | Homo sapiens Nedd-4-like ubiquitin-protein ligase WWP1 mRNA, partial cds. |
| GB | AA292676 | 0.17 | 0.31 | -0.48 | 0.000048 | Human metargidin precursor mRNA, complete cds |
| GB | H58873 | -0.78 | 1.02 | -0.24 | 0.000048 | Human (HepG2) glucose transporter gene mRNA, complete cds |
| GB | X60957 | 1.46 | -0.81 | -0.65 | 0.000052 | Human tie mRNA for putative receptor tyrosine kinase. |
| GB | AF023476 | -0.19 | -0.14 | 0.34 | 0.000052 | Homo sapiens meltrin-L precursor (ADAM12) mRNA, complete cds. |
| GB | V00509 | -0.22 | -0.19 | 0.41 | 0.000053 | Human gene for preproenkephalin |
| GB | AA452627 | -0.20 | -0.07 | 0.26 | 0.000053 | Endothelin receptor type A |

Figure 9b

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|---|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| GB | N95657 | 0.07 | 0.29 | -0.35 | 0.000054 | EST: Highly similar to HYPOTHETICAL 63.5 KD PROTEIN ZK353.1 IN CHROMOSOME III [Caenorhabditis elegans] |
| GB | U79666 | 0.20 | 0.06 | -0.26 | 0.000060 | EST |
| GB | M58664 | -0.60 | 0.94 | -0.34 | 0.000061 | Homo sapiens CD24 signal transducer mRNA, complete cds. |
| GB | W87741 | 0.57 | -0.17 | -0.39 | 0.000063 | EST: Novel |
| GB | M75165 | -0.26 | -0.80 | 1.06 | 0.000065 | AA477400 zu42a03.s1 Soares ovary tumor NbHOT Homo |
| GB | AA487812 | 0.52 | -0.94 | 0.43 | 0.000065 | Vimentin |
| GB | M24899 | -0.02 | -0.13 | 0.15 | 0.000066 | Human triiodothyronine (ear7) mRNA, complete cds. |
| INCYTE | 3415853H1 | -0.25 | -0.28 | 0.53 | 0.000067 | L40459 MUSLTBP Mus musculus latent transforming growth factor-beta binding protein (LTBP-3) mRNA, complete cds. |
| INCYTE | 1690295F6 | -0.11 | -0.07 | 0.17 | 0.000074 | PROSTUT10 M81784 g205039 Rat K+ channel mRNA, sequence. gb102rod 19 15 |
| GB | D13515 | -0.06 | -0.18 | 0.24 | 0.000077 | HUMMARR Human mRNA for key subunit of the N-methyl-D-aspartate receptor, complete cds. |
| GB | Y00757 | -0.15 | -0.17 | 0.32 | 0.000083 | Human mRNA for polypeptide 7B2. |
| GB | L76380 | 0.48 | -0.27 | -0.20 | 0.000083 | Homo sapiens (clone HSNME29) CGRP type 1 receptor mRNA, complete cds |
| INCYTE | 290375H1 | -0.35 | -0.02 | 0.37 | 0.000087 | TMLR3DT01 X83864 g1770395 Human EDG-3 gene. gb104pri 10 11 |
| GB | M32304 | 0.15 | -0.64 | 0.49 | 0.000088 | Human metalloproteinase inhibitor mRNA, complete cds. |
| GB | M30704 | -0.77 | 1.27 | -0.50 | 0.000093 | Human amphiregulin (AR) mRNA, complete cds, clones lambda-AR1 and lambda-AR2. |
| GB | X51416 | -0.03 | 0.22 | -0.19 | 0.000101 | Human mRNA for steroid hormone receptor hERR1. |
| INCYTE | 530695T6 | 1.05 | -0.51 | -0.54 | 0.000103 | EST: BRAINOT03 |
| GB | M32315 | 0.42 | -0.28 | -0.14 | 0.000107 | Human tumor necrosis factor receptor mRNA, complete cds |
| INCYTE | 4504614H1 | 0.39 | -0.07 | -0.31 | 0.000108 | BRAVXT02 AF001434 g2529706 Human Hpast (HPAST) mRNA, complete cds. gb106pri 37 -7 |
| GB | U80811 | -0.34 | -0.04 | 0.38 | 0.000115 | Human lysophosphatidic acid receptor homolog mRNA, complete cds |

Figure 9c

12/47

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-------------|------------|--------|----------|--|
| | | Endothelial | Epithelial | Muscle | | |
| GB | R93149 | -0.19 | 0.04 | 0.14 | 0.000117 | EST |
| GB | AA055101 | 0.35 | -0.03 | -0.32 | 0.000126 | Homo sapiens NADH:ubiquinone oxidoreductase 18 kDa IP subunit mRNA, nuclear gene encoding mitochondrial protein, H.sapiens mRNA for transforming growth factor alpha |
| GB | X70340 | -0.27 | 0.61 | -0.34 | 0.000126 | Human mRNA for ICAM-2, cell adhesion ligand for LFA-1. |
| GB | X15606 | 1.90 | -0.91 | -0.99 | 0.000126 | UTRSNOT05 X92521 g1731985 Human mRNA for MMP-19 protein, gb104prt 100 -48 |
| INCYTE | 1570946T6 | -0.15 | -0.15 | 0.30 | 0.000133 | Homo sapiens (clone pAT 464) potential lymphokine/cytokine mRNA, complete cds |
| GB | M25315 | -0.92 | 1.58 | -0.66 | 0.000134 | PROSNOT18 AF013598 g2352948 Rat proton gated cation channel DRASIC m gb103rod 30 -11 |
| INCYTE | 1858095F6 | -0.55 | 0.90 | -0.35 | 0.000138 | Homo sapiens CaM kinase II isoform mRNA, complete cds |
| GB | AA443177 | -0.88 | -0.83 | 1.71 | 0.000139 | Human interleukin 11 mRNA, complete cds |
| GB | M57765 | -0.09 | -0.08 | 0.16 | 0.000140 | Homo sapiens G protein-coupled receptor (GPR4) gene, complete cds. |
| GB | L36148 | 0.35 | -0.17 | -0.18 | 0.000141 | Human class III alcohol dehydrogenase (ADH5) chi subunit mRNA, complete cds. |
| GB | M30471 | -0.28 | -0.08 | 0.36 | 0.000142 | EST |
| GB | H25229 | 0.28 | -0.21 | -0.07 | 0.000142 | Homo sapiens mRNA for ST2 protein |
| GB | D12763 | 0.95 | -0.30 | -0.66 | 0.000142 | Homo sapiens mRNA for GABA-BR1a (hGB1a) receptor. |
| GB | Y11044 | -0.08 | -0.11 | 0.19 | 0.000145 | Human collagenase type IV mRNA, 3' end. |
| GB | J03210 | 0.40 | -1.24 | 0.84 | 0.000145 | Human LTF mRNA for lactoferrin (lactotransferrin). |
| GB | X52941 | -0.13 | -0.11 | 0.24 | 0.000149 | H.sapiens RON mRNA for tyrosine kinase. |
| GB | X70040 | -0.20 | 0.42 | -0.22 | 0.000149 | Solute carrier family 9 (sodium/hydrogen exchanger), isoform 1 (antiporter, Na+/H+, amiloride sensitive) |
| GB | AA459197 | -0.39 | 0.81 | -0.43 | 0.000151 | Human mRNA for KIAA0313 gene, complete cds |
| GB | AA488969 | 0.00 | -0.57 | 0.57 | 0.000153 | Human monocyte antigen CD14 (CD14) mRNA, complete cds. |
| GB | M86511 | 0.02 | -0.49 | 0.46 | 0.000154 | H.sapiens mRNA for E-cadherin |
| GB | H97778 | -0.72 | 1.41 | -0.69 | 0.000156 | Fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor receptor) |
| GB | AA058828 | 0.48 | -0.28 | -0.20 | 0.000157 | |

Figure 9d

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|--|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| INCYTE | 938765H1 | 0.53 | -0.33 | -0.20 | 0.000161 | CERVNOT01 J03004 g183181 Human guanine nucleotide-binding regulat gb103pri 50 -59 |
| GB | N46975 | -0.23 | 0.00 | 0.23 | 0.000161 | EST |
| GB | X76180 | -0.48 | 0.94 | -0.46 | 0.000161 | H.sapiens mRNA for lung amiloride sensitive Na+ channel protein |
| GB | AA004759 | 0.11 | 0.05 | -0.15 | 0.000162 | Homo sapiens dolichol monophosphate mannose synthase (DPM1) mRNA, partial cds |
| GB | X62421 | -0.19 | 0.33 | -0.15 | 0.000167 | H.sapiens mRNA for DnaJ protein homologue |
| GB | U76833 | -0.37 | -0.33 | 0.69 | 0.000168 | Human integral membrane serine protease Seprase mRNA, complete cds. |
| GB | U40992 | 0.63 | -0.55 | -0.07 | 0.000173 | Human heat shock protein hsp40 homolog mRNA, complete cds |
| GB | H96738 | -0.26 | -0.50 | 0.76 | 0.000173 | Cadherin 11 (OB-cadherin) |
| INCYTE | 3437994H1 | -0.20 | -0.24 | 0.44 | 0.000173 | PENCN05 Z66513 g1041336 F54D5.8 gb103eukp 34 -1 |
| GB | M80436 | -0.27 | 0.55 | -0.28 | 0.000176 | Human platelet activating factor receptor |
| GB | S82666 | -0.50 | 0.95 | -0.45 | 0.000176 | EST: AA459401 zx89g01.s1 Soares ovary tumor NbHOT Homo |
| GB | AA453712 | -0.51 | -0.47 | 0.98 | 0.000181 | Lumican |
| GB | AA234897 | 0.13 | -0.19 | 0.06 | 0.000182 | MADS box transcription enhancer factor 2, polypeptide C (myocyte enhancer factor 2C) |
| GB | R83000 | -0.24 | 0.49 | -0.26 | 0.000186 | Basic transcription factor 3 |
| GB | M14764 | -0.35 | 0.77 | -0.42 | 0.000186 | Human nerve growth factor receptor mRNA, complete cds |
| GB | AA456585 | -0.27 | 0.55 | -0.28 | 0.000186 | RecQ protein-like (DNA helicase Q1-like) |
| GB | M36089 | -0.14 | -0.46 | 0.61 | 0.000186 | Human DNA-repair protein (XRCC1) mRNA, complete cds. |
| INCYTE | 2313677H1 | 0.22 | 0.12 | -0.34 | 0.000191 | Human synapsin IIa (SYN2) mRNA, complete |
| GB | X03363 | -0.21 | 0.23 | -0.01 | 0.000193 | Human c-erb-B-2 mRNA. |
| GB | U27109 | 1.50 | -0.74 | -0.76 | 0.000193 | Human prepromultimerin mRNA, complete cds |
| GB | AA393950 | -0.43 | 0.84 | -0.41 | 0.000194 | EST: z178a10.r1 Soares testis NHT Homo sapiens cDNA clone 728442 5' similar to gb:L29007_cds1 AMILORIDE-SENSITIVE SODIUM CHANNEL ALPHA-SUBUNIT (HUMAN) |
| GB | L03203 | 0.48 | -0.94 | 0.45 | 0.000199 | Human peripheral myelin protein 22 (GAS3) mRNA, complete cds. |

Figure 9e

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|--|-----------|-----------------------|----------------------|------------------|----------|---|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| INCYTE GB GB INCYTE | 2701503T6 | -0.39 | 0.80 | -0.41 | 0.000200 | QVARTUT10 U20428 g1890631 Human SNC19 mRNA sequence. gb104pri 18 -30 |
| | AA599173 | -0.07 | -0.52 | 0.59 | 0.000202 | Human monocytic leukaemia zinc finger protein (MOZ) mRNA, complete cds |
| | AA464566 | -0.22 | -0.34 | 0.56 | 0.000207 | Human mRNA for LDL-receptor related protein |
| | 2135769H1 | -0.35 | 0.59 | -0.25 | 0.000212 | ENDCNOT01 M14300 g183097 Human growth factor-inducible 2A9 gene, gb103pri 100 -88 |
| GB GB GB | M88279 | -0.05 | 0.40 | -0.34 | 0.000213 | Human immunophilin (FKBP52) mRNA, complete cds |
| | X15606 | 1.82 | -0.96 | -0.86 | 0.000215 | Human mRNA for ICAM-2, cell adhesion ligand for LFA-1. |
| | AA429219 | -0.17 | 0.37 | -0.21 | 0.000223 | EST: zv78h08.r1 Soares total fetus Nb2HF8 9w Homo sapiens cDNA clone 759807 5' similar to TR:G1136412 |
| | AF083552 | -0.29 | 0.34 | -0.05 | 0.000224 | EST: G1136412 KIAA0176 PROTEIN. Homo sapiens canalicular multispecific organic anion transporter 2 (CMOAT2) mRNA, complete cds. |
| INCYTE GB GB GB GB GB GB GB GB GB | 2798465H1 | -0.16 | 0.46 | -0.30 | 0.000226 | NPOLNOT01 X04366 g29663 Human mRNA for calcium activated neutral gb103pri 98 -69 |
| | AA478268 | -0.17 | 0.32 | -0.16 | 0.000228 | Human CIBP mRNA, complete cds |
| | AA282906 | -0.71 | 0.54 | 0.17 | 0.000231 | CD44 antigen (cell adhesion molecule) |
| | R94659 | -0.08 | -0.16 | 0.25 | 0.000232 | EST |
| | J05036 | 0.53 | -0.62 | 0.09 | 0.000232 | H94487 yv19e06.s1 Soares fetal liver spleen 1NFLS |
| | U97669 | -0.33 | -0.01 | 0.34 | 0.000235 | Homo sapiens Notch3 (NOTCH3) mRNA, complete cds. |
| | J05392 | -0.97 | 1.66 | -0.70 | 0.000235 | EST: AA074511 zm17e08.s1 Stratagene pancreas (#937208) |
| | U37791 | -0.17 | -0.18 | 0.35 | 0.000237 | Homo sapiens clone rasi-1 matrix metalloproteinase RASI-1 mRNA, complete cds. |
| | M14058 | -0.15 | 0.31 | -0.17 | 0.000240 | Human complement C1r mRNA, complete cds. |
| | W58658 | 0.23 | -0.02 | -0.21 | 0.000240 | H.sapiens mRNA for CLPP |
| | M60315 | 1.09 | -0.66 | -0.44 | 0.000241 | Human transforming growth factor-beta (tgf-beta) mRNA, complete cds. |

Figure 9f

15/47

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|---|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| GB | X51417 | 0.03 | 0.00 | -0.03 | 0.000241 | Human mRNA for steroid hormone receptor hERR2. |
| GB | L76191 | -0.08 | 0.21 | -0.14 | 0.000243 | Homo sapiens interleukin-1 receptor-associated kinase (IRAK) mRNA, complete cds |
| GB | T98559 | 0.57 | -0.50 | -0.07 | 0.000246 | Ribosomal protein L17 |
| GB | R43734 | 0.77 | -1.23 | 0.47 | 0.000248 | Laminin, alpha 4 |
| GB | T51895 | 0.42 | -0.06 | -0.35 | 0.000248 | Hepatoma transmembrane kinase |
| GB | X04481 | -0.07 | -0.05 | 0.12 | 0.000253 | Human mRNA for complement component C2 |
| GB | AA486628 | 0.13 | 0.25 | -0.38 | 0.000253 | Early growth response protein 1 |
| GB | AA495846 | 0.58 | -0.59 | 0.01 | 0.000256 | TRANSFORMING PROTEIN RHOB |
| GB | AA460679 | 0.07 | -0.36 | 0.29 | 0.000257 | Human mRNA for CMP-sialic acid transporter, complete cds |
| GB | H27933 | -0.21 | 0.32 | -0.11 | 0.000260 | EST: y158e09.s1 Soares breast 3NbHBst Homo sapiens cDNA clone 162472 3' similar to gb:M64572 PROTEIN-TYROSINE PHOSPHATASE PTP-H1 (HUMAN);, mRNA |
| GB | M57285 | -0.14 | -0.14 | 0.28 | 0.000264 | Human coagulation factor X (F10) mRNA, complete cds |
| GB | U78180 | -0.14 | -0.04 | 0.18 | 0.000264 | Human sodium channel 2 (hBNC2) mRNA, alternatively spliced, complete cds |
| GB | AA455067 | 0.75 | -0.29 | -0.46 | 0.000265 | Synuclein, alpha (non A4 component of amyloid precursor) |
| GB | J03258 | -0.31 | 0.29 | 0.02 | 0.000268 | Human vitamin D receptor mRNA, complete cds |
| GB | S56805 | 1.26 | -0.61 | -0.65 | 0.000268 | Endothelin-1 |
| GB | AA069517 | -0.40 | 0.02 | 0.39 | 0.000269 | Protein convertase subtilisin/kexin type 2 |
| GB | AA393856 | 0.21 | 0.04 | -0.25 | 0.000269 | Human putative transmembrane GTPase mRNA, partial cds |
| GB | AA146802 | 0.65 | -0.32 | -0.33 | 0.000277 | H.sapiens mRNA for phosphate cyclase |
| GB | AA490721 | -0.39 | 0.09 | 0.29 | 0.000277 | Human splicing factor SRp30c mRNA, complete cds |
| GB | M19645 | -0.17 | -0.07 | 0.25 | 0.000280 | Human 78 kdalton glucose-regulated protein (GRP78) gene, complete cds. |
| GB | M97370 | 0.27 | -0.16 | -0.11 | 0.000281 | Human adenosine receptor (A2) gene, complete cds. |
| GB | W01240 | 0.35 | -0.34 | -0.01 | 0.000281 | Membrane protein, palmitoylated 1 (55kD) |
| GB | X00588 | -0.24 | 0.29 | -0.05 | 0.000281 | Human mRNA for precursor of epidermal growth factor receptor |
| GB | X83864 | -0.40 | 0.47 | -0.07 | 0.000285 | H.sapiens EDG-3 gene |

Figure 9g

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-------------|------------|--------|----------|---|
| | | Endothelial | Epithelial | Muscle | | |
| GB | N66942 | 0.50 | -0.29 | -0.21 | 0.000289 | H.sapiens mRNA for putative progesterone binding protein |
| GB | M31210 | 1.07 | -0.59 | -0.48 | 0.000289 | Human endothelial differentiation protein (edg-1) gene mRNA, complete cds |
| INCYTE | 3090747H1 | -0.39 | -0.05 | 0.44 | 0.000296 | BRSTNOT19 X62841 g57648 Rat mRNA for potassium channel protein (gb102rod 27 -7 |
| INCYTE | 2027449H1 | -0.92 | 1.79 | -0.86 | 0.000296 | KERANOT02 g179896 Human CaN19 mRNA sequence. gb97pri 68 -76 |
| GB | U83410 | -0.16 | -0.19 | 0.34 | 0.000301 | Human CUL-2 (cul-2) mRNA, complete cds. |
| GB | X15606 | 1.78 | -0.88 | -0.90 | 0.000301 | Human mRNA for ICAM-2, cell adhesion ligand for LFA-1. |
| GB | AA489275 | -0.19 | 0.24 | -0.05 | 0.000303 | Human sodium/potassium-transporting ATPase beta-3 subunit mRNA, complete cds |
| GB | X61598 | 0.14 | -0.64 | 0.49 | 0.000308 | H.sapiens mRNA for colligin (a collagen-binding protein) |
| GB | N69574 | 0.04 | -0.25 | 0.21 | 0.000308 | EST |
| GB | T62627 | 1.36 | -0.67 | -0.69 | 0.000313 | Human nuclear phosphoprotein mRNA, complete cds |
| INCYTE | 2301338H1 | -0.14 | 0.39 | -0.25 | 0.000316 | BRSTNOT05 X04366 g29663 Human mRNA for calcium activated neutral gb103pri 98 -7 |
| GB | U76549 | -0.92 | 1.50 | -0.58 | 0.000322 | Human cytokeratin 8 mRNA, complete cds. |
| GB | X02530 | -0.39 | 0.37 | 0.01 | 0.000322 | Human mRNA for gamma-interferon inducible early response gene (with homology to platelet proteins). |
| GB | AA411440 | -0.28 | 0.62 | -0.34 | 0.000328 | Villin 2 (ezrin) |
| GB | AA487370 | 0.43 | -0.07 | -0.36 | 0.000332 | Human myosin regulatory light chain mRNA, complete cds |
| GB | R96668 | 1.07 | -0.54 | -0.53 | 0.000336 | H.sapiens mRNA for chemokine HCC-1 |
| GB | X81120 | 0.87 | -0.48 | -0.38 | 0.000336 | H.sapiens mRNA for central cannabinoid receptor |
| GB | X04882 | -0.09 | 0.32 | -0.24 | 0.000345 | Human mRNA for dihydropteridine reductase (hDHPR). |
| GB | H94944 | 0.58 | -0.23 | -0.35 | 0.000346 | EST: RAS-RELATED PROTEIN RAL-A |
| GB | AA490238 | 0.11 | -0.35 | 0.23 | 0.000348 | H.sapiens mitogen inducible gene mig-2, complete CDS |
| GB | L04510 | -0.04 | -0.05 | 0.09 | 0.000348 | Human nucleotide binding protein mRNA, complete cds. |
| INCYTE | 2510757F6 | -0.09 | 0.24 | -0.14 | 0.000349 | EST: CONUTUT01 X95241 g1487972 I(2)id gb103eukp 9 -6 |
| GB | AA465593 | -0.25 | -0.12 | 0.37 | 0.000356 | PROTEASOME COMPONENT C8 |
| GB | AA284495 | 0.82 | -0.44 | -0.38 | 0.000356 | Human mRNA for KIAA0081 gene, partial cds |
| GB | H57727 | 0.47 | -0.21 | -0.26 | 0.000356 | EST: Highly similar to PTB-ASSOCIATED SPLICING FACTOR [Homo sapiens] |

Figure 9h

17/47

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|---|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| GB | L36148 | 0.43 | -0.22 | -0.21 | 0.000356 | Homo sapiens G protein-coupled receptor (GPR4) gene, complete cds. |
| GB | AA393452 | -0.14 | 0.31 | -0.17 | 0.000360 | EST: z171c01.r1 Soares testis NHT Homo sapiens cDNA clone 727776 5' similar to WP:D2045.8 CE00608 TNF-ALPHA INDUCED PROTEIN B12 ; |
| GB | M16768 | 0.25 | 0.00 | -0.25 | 0.000364 | Human T-cell receptor gamma chain VJCI-CII-CIII region mRNA, complete cds. |
| GB | AA448667 | 0.09 | 0.27 | -0.36 | 0.000365 | Human heterochromatin protein p25 mRNA, complete cds |
| GB | R65759 | -0.13 | -0.30 | 0.43 | 0.000368 | EST |
| GB | M69215 | -0.79 | 0.48 | 0.31 | 0.000375 | Human hyaluronate receptor (CD44) gene, exon 1. |
| GB | U13666 | -0.11 | -0.16 | 0.27 | 0.000380 | Human G protein-coupled receptor (GPR1) gene, complete cds. |
| GB | U38545 | 0.23 | -0.12 | -0.10 | 0.000382 | Human ARF-activated phosphatidylcholine-specific phospholipase D1a (hPLD1) mRNA, complete cds |
| GB | H57180 | 0.15 | -0.03 | -0.11 | 0.000385 | Phospholipase C, gamma 2 (phosphatidylinositol-specific) |
| GB | M58552 | 0.11 | -0.62 | 0.51 | 0.000385 | Human collagenase type IV (CLG4) gene, exon 1 |
| GB | X92106 | 0.35 | -0.10 | -0.24 | 0.000391 | H.sapiens mRNA for bleomycin hydrolase. |
| GB | X56134 | 0.46 | -0.86 | 0.41 | 0.000395 | Human mRNA for vimentin. |
| GB | N45139 | -0.10 | -0.01 | 0.11 | 0.000396 | EST |
| GB | R76770 | -0.08 | 0.19 | -0.11 | 0.000398 | EST |
| INCYTE | 4727571H1 | -0.26 | 0.61 | -0.35 | 0.000399 | X99897 H.sapiens mRNA for P/Q-type calcium channel alpha1 subunit |
| GB | X54936 | 0.91 | -0.41 | -0.49 | 0.000400 | EST: AA130714 zo13h02.s1 Stratagene colon (#937204) Hom |
| GB | R22412 | 1.92 | -1.03 | -0.88 | 0.000401 | Platelet/endothelial cell adhesion molecule (CD31 antigen) |
| GB | M31210 | 0.82 | -0.43 | -0.39 | 0.000405 | Human endothelial differentiation protein (edg-1) gene mRNA, complete cds |
| GB | AF004327 | 0.86 | -0.44 | -0.42 | 0.000406 | EST: AA125872 z123d01.s1 Soares_pregnant_uterus_NbHPU H |
| GB | X04365 | 1.70 | -0.86 | -0.84 | 0.000412 | Human mRNA for pre-pro-von Willebrand factor. |
| GB | AA490462 | -0.15 | -0.04 | 0.19 | 0.000416 | Human mRNA for AEBP1 gene, complete cds |
| GB | AA448194 | -0.11 | -0.41 | 0.52 | 0.000420 | Human duplicate spinal muscular atrophy mRNA, clone 5G7, partial cds |

Figure 9i

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|---|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| GB | M16405 | 0.25 | -0.36 | 0.11 | 0.000421 | Human m4 muscarinic acetylcholine receptor gene. |
| GB | W74565 | 0.19 | -0.23 | 0.04 | 0.000422 | EST: Weakly similar to contains similarity to C2H2-type zinc fingers [C.elegans] |
| GB | M80436 | -0.21 | 0.37 | -0.16 | 0.000427 | Human platelet activating factor receptor |
| GB | X00351 | -0.35 | -0.09 | 0.43 | 0.000429 | Human mRNA for beta-actin. |
| GB | AB000712 | -0.23 | 0.44 | -0.20 | 0.000441 | EST: AA430665 zw26a07.s1 Soares ovary tumor NbHOT Homo |
| GB | AA284668 | -0.78 | 0.97 | -0.19 | 0.000446 | Urokinase-type plasminogen activator |
| GB | R63295 | -0.26 | 0.11 | 0.15 | 0.000447 | EST |
| GB | S57551 | 0.23 | -0.11 | -0.12 | 0.000450 | guanylate cyclase-coupled enterotoxin receptor [human, T84 colonic cell line, mRNA, 3787 nt]. |
| GB | U66198 | 0.13 | 0.08 | -0.22 | 0.000452 | Human fibroblast growth factor homologous factor 2 (FHF-2) mRNA, complete cds. |
| GB | U07225 | -0.09 | 0.24 | -0.15 | 0.000453 | Human P2U nucleotide receptor mRNA, complete cds |
| GB | L29401 | -0.56 | 0.55 | 0.01 | 0.000459 | Human low density lipoprotein receptor mRNA. |
| GB | R33755 | -0.21 | 0.48 | -0.27 | 0.000461 | Glutathione-S-transferase pi-1 |
| GB | AA428170 | 0.35 | -0.42 | 0.08 | 0.000463 | Dihydropyrimidine dehydrogenase |
| GB | M59911 | -0.61 | 0.88 | -0.27 | 0.000464 | EST: AA424695 zv33a02.s1 Soares ovary tumor NbHOT Homo |
| INCYTE | g1967662 | -0.54 | 0.05 | 0.49 | 0.000468 | U73643 U73643 Human Chromosome 11 Cosmid cSRL34e5, complete sequence. Blastn P. 3.2E-21 |
| GB | M95167 | 0.03 | 0.01 | -0.04 | 0.000471 | Homo sapiens dopamine transporter (SLC6A3) mRNA, complete cds. |
| GB | AA489699 | 1.22 | -0.55 | -0.67 | 0.000471 | Human COP9 homolog (HCOP9) mRNA, complete cds |
| GB | M86400 | -0.10 | 0.43 | -0.32 | 0.000485 | Human phospholipase A2 mRNA, complete cds. |
| GB | D83812 | -0.09 | -0.04 | 0.13 | 0.000492 | T80924 yd25g11.r1 Soares fetal liver spleen 1NFLS |
| GB | M37435 | -0.04 | -0.21 | 0.25 | 0.000496 | Human macrophage-specific colony-stimulating factor (CSF-1) mRNA, complete cds |
| INCYTE | 1696122T6 | -0.01 | -0.15 | 0.15 | 0.000500 | EST: COLNNOT23 |
| GB | M17783 | -1.14 | 0.53 | 0.61 | 0.000500 | EST: N59721 yv56c02.r1 Soares fetal liver spleen 1NFLS |
| GB | AA457119 | 0.43 | 0.10 | -0.53 | 0.000506 | EST: AA457119 Homo sapiens cDNA clone IMAGE:810454 3', mRNA sequence |

Figure 9j

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|--|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| GB | M20566 | -0.11 | 0.24 | -0.13 | 0.000506 | Human interleukin 6 receptor mRNA, complete cds |
| GB | U83115 | -0.16 | 0.52 | -0.37 | 0.000506 | Human non-lens beta gamma-crystallin like protein (AIM1) mRNA, partial cds. |
| GB | AA454743 | -0.24 | 0.49 | -0.25 | 0.000510 | Human protease M mRNA, complete cds |
| GB | AA181500 | 1.19 | -1.34 | 0.15 | 0.000510 | Protein kinase, cAMP-dependent, regulatory, type II, beta |
| INCYTE | 1742456R6 | -0.24 | 0.17 | 0.07 | 0.000511 | HIPONON01 M94055 g456678 Human voltage-gated sodium channel mRNA, gb103pri 100 -81 |
| GB | AA456271 | -0.04 | 0.19 | -0.16 | 0.000514 | Human Hlark mRNA, complete cds |
| INCYTE | 3584702H1 | -0.17 | 0.27 | -0.10 | 0.000515 | Mouse homer-1a mRNA, complete cds. |
| GB | H79888 | 0.37 | -0.28 | -0.09 | 0.000518 | EST: Weakly similar to contactin associated protein [H.sapiens] |
| GB | X00187 | -0.11 | -0.11 | 0.22 | 0.000533 | Human preproenkephalin A gene, 5' flanking region. |
| GB | AA486221 | -0.16 | -0.11 | 0.26 | 0.000542 | Human inducible poly(A)-binding protein mRNA, complete cds |
| GB | H59758 | -0.14 | 0.32 | -0.18 | 0.000543 | EST: Novel |
| GB | D10995 | -0.04 | 0.00 | 0.04 | 0.000545 | EST: AA909121 clone IMAGE:1542757 3' similar to 5-HYDROXYTRYPTAMINE 1B RECEPTOR |
| INCYTE | 1452259F6 | -0.26 | 0.53 | -0.27 | 0.000569 | EST: PENITUT01 D13626 g285995 KIAA0001 gb103pri 17 1 |
| GB | AJ001015 | -0.09 | -0.12 | 0.21 | 0.000575 | Homo sapiens mRNA encoding RAMP2. |
| INCYTE | 2222054H1 | -0.20 | 0.32 | -0.12 | 0.000584 | LUNGNOT18 U42975 g1150862 Rat Shal-related potassium channel Kv4.3 gb102rod 57 -44 |
| GB | Z67743 | -0.63 | -0.07 | 0.70 | 0.000596 | H.sapiens mRNA for CLC-7 chloride channel protein. |
| GB | L31409 | -0.30 | -0.03 | 0.33 | 0.000596 | Homo sapiens creatine transporter mRNA, complete cds |
| GB | AA504617 | 0.44 | -1.11 | 0.67 | 0.000597 | Homo sapiens autoantigen p542 mRNA, 3' end of cds |
| GB | AA608557 | -0.08 | -0.13 | 0.21 | 0.000602 | Damage-specific DNA binding protein 1 (127 kD) |
| INCYTE | 928019R6 | -0.05 | -0.01 | 0.05 | 0.000608 | BRAINOT04 X62840 g57652 Rat mRNA for potassium channel protein (gb102rod 16 -5 |
| GB | M24748 | -0.07 | -0.09 | 0.16 | 0.000613 | Human thyroid hormone receptor alpha 1 (TR-alpha-1) gene, complete cds. |
| GB | AA598978 | -0.10 | -0.14 | 0.24 | 0.000623 | Filamin 1 (actin-binding protein-280) |
| GB | N59542 | -0.64 | 0.08 | 0.56 | 0.000627 | EST: Weakly similar to coded for by C. elegans cDNA CEESW58F [C.elegans] |
| GB | H68845 | 0.11 | 0.13 | -0.24 | 0.000628 | H.sapiens thiol-specific antioxidant protein mRNA |

Figure 9k

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-------------|------------|--------|----------|--|
| | | Endothelial | Epithelial | Muscle | | |
| GB | W68044 | -0.17 | 0.25 | -0.08 | 0.000633 | EST: zd39f04.r1 Soares fetal heart NbHH19W Homo sapiens cDNA clone 343039 5' |
| GB | AA487681 | 0.25 | -0.31 | 0.06 | 0.000633 | Human mRNA for ornithine decarboxylase antizyme, ORF 1 and ORF 2 |
| GB | H94163 | 0.20 | -0.26 | 0.07 | 0.000636 | ESTs |
| GB | K03226 | -0.74 | 0.84 | -0.10 | 0.000638 | Human preproreninase mRNA, complete cds. |
| GB | M18692 | -0.18 | 0.16 | 0.02 | 0.000643 | Human elastase III B mRNA, complete cds, clone pCL1E3 |
| GB | R92609 | 0.12 | 0.09 | -0.21 | 0.000652 | EST: Novel |
| GB | T96731 | -0.24 | -0.14 | 0.39 | 0.000652 | EST: Highly similar to HLA CLASS II HISTOCOMPATIBILITY ANTIGEN, DX BETA CHAIN PRECURSOR [Homo sapiens] |
| INCYTE | 1650566F6 | -0.26 | 0.50 | -0.25 | 0.000654 | EST: GPCR_48_TL45 PROSTUT09 g285995 KIAA0001 gb99prip 30 -9 |
| GB | R98877 | -0.04 | -0.08 | 0.12 | 0.000658 | ESTs |
| GB | H94469 | 0.44 | -0.25 | -0.19 | 0.000661 | EST: Weakly similar to T01G9.4 [C.elegans] |
| INCYTE | 1716001T6 | 0.40 | -0.18 | -0.22 | 0.000661 | EST: UCMCNOT02 |
| GB | AA419164 | 0.43 | -0.48 | 0.05 | 0.000663 | RETINOIC ACID RECEPTOR BETA-2 |
| GB | AA457644 | -0.02 | -0.17 | 0.20 | 0.000664 | EST: Human clone 23707 mRNA, partial cds |
| GB | X63924 | -0.06 | -0.03 | 0.08 | 0.000665 | H. sapiens CD18 exon 14. |
| GB | R01272 | -0.14 | -0.06 | 0.20 | 0.000671 | ESTs |
| GB | M74782 | 0.35 | -0.22 | -0.12 | 0.000671 | Human interleukin 3 receptor (hIL-3Ra) mRNA, complete cds |
| INCYTE | 2211526T6 | -0.02 | -0.10 | 0.13 | 0.000673 | SINTFET03 AF026260 g2605715 Human vitamin D receptor (VDR) mRNA, com gb104p1 17 -10 |
| GB | AA452556 | -0.05 | -0.17 | 0.22 | 0.000686 | H.sapiens mRNA for TRAMP protein |
| GB | W47576 | 0.40 | -0.37 | -0.03 | 0.000688 | ESTs |
| GB | X07549 | -0.42 | 0.80 | -0.38 | 0.000697 | Human mRNA for cathepsin H (E.C.3.4.22.16.). |
| GB | U48730 | 0.09 | -0.03 | -0.06 | 0.000699 | Human transcription factor Stat5b (stat5b) mRNA, complete cds. |
| GB | T95693 | -0.32 | 0.35 | -0.03 | 0.000702 | ESTs |
| GB | L01639 | 0.72 | -0.40 | -0.32 | 0.000704 | Human (clone HSY3RR) neuropeptide Y receptor (NPYR) mRNA, complete cds |
| INCYTE | 3248833H1 | -0.20 | -0.16 | 0.36 | 0.000711 | Human mRNA encoding RAMP1. |

Figure 9I

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|--|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| GB | R88734 | 0.58 | -0.27 | -0.31 | 0.000717 | EST |
| GB | AA504554 | -0.07 | -0.22 | 0.29 | 0.000723 | Human cytoskeleton associated protein (CG22) mRNA, complete cds |
| GB | U12512 | -0.20 | -0.09 | 0.28 | 0.000726 | Human bradykinin receptor B1 subtype mRNA, complete cds |
| GB | M11723 | -0.09 | 0.18 | -0.09 | 0.000734 | Human blood coagulation factor XII (Hageman factor) mRNA |
| INCYTE | 2604309F6 | -0.10 | 0.20 | -0.10 | 0.000734 | LUNGTUT07 D30785 g1648847 Mouse mRNA for neuropsin, complete cds. gb104rod 30 -13 |
| GB | S60489 | 0.39 | 0.39 | -0.78 | 0.000739 | CD9=CD9 antigen mRNA. |
| GB | M59916 | 0.30 | -0.47 | 0.17 | 0.000744 | Human acid sphingomyelinase (ASM) mRNA, complete cds. |
| GB | M11233 | -0.52 | -0.53 | 1.06 | 0.000745 | Human cathepsin D mRNA, complete cds. |
| GB | L01639 | 0.60 | -0.43 | -0.17 | 0.000750 | Human (clone HSY3RR) neuropeptide Y receptor (NPYR) mRNA, complete cds |
| GB | H25761 | 0.44 | -0.16 | -0.28 | 0.000762 | EST |
| GB | AA025156 | -0.18 | 0.18 | 0.00 | 0.000775 | Growth Factor/ Receptor |
| GB | W74362 | 0.16 | 0.21 | -0.37 | 0.000786 | EST |
| GB | X61800 | -0.52 | 0.44 | 0.08 | 0.000793 | M.musculus mRNA for C/EBP delta |
| GB | N71365 | -0.10 | -0.18 | 0.28 | 0.000812 | EST |
| GB | AA454662 | 0.07 | 0.18 | -0.25 | 0.000812 | Human mRNA for KIAA0020 gene, complete cds |
| GB | AA450180 | 0.01 | 0.26 | -0.26 | 0.000813 | ZNF75 |
| GB | N76338 | 0.26 | -0.11 | -0.14 | 0.000819 | EST: Highly similar to UNR PROTEIN [Cavia porcellus] |
| GB | U88880 | 0.40 | -0.23 | -0.16 | 0.000837 | Homo sapiens Toll-like receptor 4 (TLR4) mRNA, complete cds. |
| INCYTE | 3269857F6 | 0.22 | -0.24 | 0.02 | 0.000843 | X60007 NSGRP2MR N.sylvestris mRNA for glycine rich protein 2 (GRP2). Blastn P. 0.086 |
| GB | M60626 | -0.03 | -0.05 | 0.08 | 0.000848 | Human N-formylpeptide receptor (fMLP-R98) mRNA, complete cds |
| INCYTE | 1751294F6 | -0.17 | 0.26 | -0.09 | 0.000848 | EST: LIVRTUT01 AC002306 g2213635 R33799_1 gb103prip 46 -12 |
| GB | M29871 | 0.57 | -0.13 | -0.45 | 0.000851 | Human ras-related C3 botulinum toxin substrate (rac) mRNA, complete cds |
| GB | M58603 | -0.14 | -0.14 | 0.28 | 0.000860 | Human nuclear factor kappa-B DNA binding subunit (NF-kappa-B) mRNA, complete cds. |
| GB | X12881 | -0.11 | 1.11 | -0.99 | 0.000863 | Human mRNA for cytokeratin 18. |

Figure 9m

Primary Cell Gene Expression Profile

| Seq. Source | Accession | Endothelial Signature | Epithelial Signature | Muscle Signature | p-value | Source Description |
|-------------|-----------|-----------------------|----------------------|------------------|----------|--|
| INCYTE | 3118530H1 | -0.03 | 0.27 | -0.24 | 0.000863 | EST: LUNGUT13 U95727 g2281450 Rat DnaJ homolog 2 mRNA, complete cds. gb103rod 33 -39 |
| GB | M94054 | -0.09 | -0.35 | 0.44 | 0.000863 | Human lysyl oxidase (LOX) mRNA, complete cds. |
| INCYTE | 1519824H1 | -0.10 | 0.33 | -0.24 | 0.000864 | EST |
| GB | X70070 | -0.04 | -0.02 | 0.07 | 0.000877 | H.sapiens mRNA for neurotensin receptor |
| GB | X58454 | -0.13 | 0.21 | -0.08 | 0.000878 | Human HD5DR gene for D5 dopamine receptor. |
| GB | M37435 | -0.02 | -0.20 | 0.22 | 0.000891 | Human macrophage-specific colony-stimulating factor (CSF-1) mRNA, complete cds |
| GB | AA486275 | 0.15 | 0.07 | -0.21 | 0.000892 | LEUKOCYTE ELASTASE INHIBITOR |
| GB | M80800 | 0.37 | -0.33 | -0.05 | 0.000894 | Pig gp145-tyrC (trkC) mRNA, complete cds |
| INCYTE | 1429303H1 | -0.04 | -0.10 | 0.15 | 0.000904 | EST: SINTBST01 |
| GB | U41163 | -0.22 | 0.37 | -0.14 | 0.000904 | Human creatine transporter (SLC6A10) gene, partial cds. |
| INCYTE | 449337H1 | 0.07 | -0.18 | 0.11 | 0.000922 | M57428 RATS6KIN3 Rat S6 kinase mRNA, complete cds. Blastn P. 0.00000002 |
| GB | D13538 | -0.06 | -0.15 | 0.21 | 0.000923 | Human alpha2CII-adrenergic receptor gene, complete cds. |
| GB | L12350 | -0.41 | -0.25 | 0.66 | 0.000941 | Human thrombospondin 2 (THBS2) mRNA, complete cds. |
| GB | M11730 | -0.28 | 0.18 | 0.10 | 0.000948 | Human tyrosine kinase-type receptor (HER2) mRNA, complete cds. |
| GB | M54930 | -0.06 | -0.03 | 0.09 | 0.000951 | Human vasoactive intestinal peptide and peptide histidine isoleucine mRNA, 3' end |
| GB | N76944 | 0.08 | 0.06 | -0.13 | 0.000955 | EST |
| GB | X02544 | -0.06 | -0.01 | 0.07 | 0.000961 | EST: A700876 zj36c12.s1 Soares_fetal_liver_spleen_1NFLS |
| GB | AA451716 | 0.02 | 0.11 | -0.14 | 0.000969 | Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1 (p105) |
| INCYTE | 279279H1 | -0.45 | 0.70 | -0.25 | 0.000986 | Human cutaneous myofibroblast protein |
| GB | Y09479 | -0.32 | 0.04 | 0.28 | 0.000987 | H.sapiens mRNA for G protein-coupled receptor Edg-2 |
| GB | H84982 | -0.10 | -0.06 | 0.15 | 0.000991 | Human checkpoint suppressor 1 mRNA, complete cds |
| GB | AA443688 | -0.18 | -0.23 | 0.41 | 0.001004 | GTP cyclohydrolase 1 (dopa-responsive dystonia) (alternative products) |
| GB | L33404 | -0.15 | 0.33 | -0.18 | 0.001008 | Human stratum corneum chymotryptic enzyme mRNA, complete cds |

Figure 9n

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|--|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| GB | H19264 | 0.02 | 0.08 | -0.10 | 0.001014 | EST: yn50c10.r1 Soares adult brain N2b5HB55Y Homo sapiens cDNA clone 171858 5' similar to SP:B41359 B41359 POTASSIUM CHANNEL PROTEIN SHAB11 - FRUIT FLY ; mRNA sequence. |
| GB | M85079 | 0.45 | -0.18 | -0.27 | 0.001032 | Human TGF-beta type II receptor mRNA, complete cds |
| GB | AA598527 | 0.03 | 0.17 | -0.21 | 0.001035 | EST: Human BAC clone RG083M05 from 7q21-7q22 |
| GB | AA286908 | 0.20 | -0.41 | 0.21 | 0.001036 | Myxovirus (Influenza) resistance 2, homolog of murine |
| INCYTE | 1594625F6 | -0.05 | -0.15 | 0.20 | 0.001061 | BRAINOT14 S67803 g544589 excitatory amino acid receptor 1=glutama gb104pri 94 -48 |
| GB | R78516 | -0.28 | 0.28 | 0.00 | 0.001070 | EST: Weakly similar to C35C5.3 [C.elegans] |
| GB | AA280924 | -0.13 | -0.16 | 0.29 | 0.001095 | Carbonyl reductase |
| GB | M37763 | -0.10 | -0.15 | 0.25 | 0.001119 | Human neurotrophin-3 (NT-3) gene, complete cds. |
| GB | AA279601 | 0.26 | -0.27 | 0.00 | 0.001122 | Human Hou mRNA, complete cds |
| GB | AC004126 | -0.31 | 0.83 | -0.52 | 0.001123 | GPCR 101 |
| GB | AB000714 | -0.02 | -0.25 | 0.26 | 0.001123 | EST: AA434144 zw28b06.s1 Soares ovary tumor NbHOT Homo |
| GB | U66199 | -0.05 | 0.13 | -0.09 | 0.001156 | Human fibroblast growth factor homologous factor 3 (FHF-3) mRNA, complete cds. |
| GB | AA133129 | 0.53 | -0.59 | 0.06 | 0.001163 | Transcription elongation factor B (SII), polypeptide 3 (110kD, elongin A) |
| GB | N22980 | 0.36 | -0.24 | -0.12 | 0.001165 | EST: Novel |
| GB | AA085318 | -0.24 | -0.18 | 0.42 | 0.001165 | Human stanniocalcin precursor (STC) mRNA, complete cds |
| GB | T61575 | -0.53 | 0.21 | 0.33 | 0.001171 | EST: AA630328 ac08g12.s1 Stratagene HeLa cell s3 937216 |
| INCYTE | 150224T6 | 0.00 | -0.06 | 0.06 | 0.001173 | FIBRANT01 Z80147 g1657296 Human CACNL1A4 gene, exon 37. gb103pri 99 -35 |
| GB | R23586 | 0.06 | -0.16 | 0.10 | 0.001177 | EST |
| INCYTE | 3384890H1 | 0.27 | -0.13 | -0.14 | 0.001178 | EST: L77606 HUM17QYCAH Homo sapiens (clone SEL277a) 17q YAC (303G8) RNA. Blastn P. 0.00000018 |
| GB | L08044 | 0.19 | -0.07 | -0.12 | 0.001189 | EST: N74131 za75h01.s1 Soares_fetal_lung_NbHL19W Homo s |
| GB | M63099 | -0.27 | 0.52 | -0.25 | 0.001189 | Human interleukin 1 receptor antagonist (IL1RN) gene, complete cds. |
| GB | H52141 | 0.36 | -0.11 | -0.26 | 0.001195 | Inositol polyphosphate-1-phosphatase |

Figure 9o

Primary Cell Gene Expression Profile

| Seq. Source | Accession | Signature | | | p-value | Source Description |
|-------------|-----------|-----------------------|----------------------|------------------|----------|--|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| INCYTE | 1652456H1 | -0.02 | 0.04 | -0.02 | 0.001214 | PROSTUT08 U75329 g2507612 Human serine protease mRNA, complete cds gb104pri 92 -59 |
| GB | M60828 | -0.14 | -0.17 | 0.31 | 0.001233 | Human keratinocyte growth factor mRNA, complete cds. |
| GB | U39613 | 0.26 | -0.13 | -0.13 | 0.001242 | Human cysteine protease ICE-LAP3 mRNA, complete cds. |
| GB | U59832 | -0.31 | 0.06 | 0.25 | 0.001249 | Human transcription factor, forkhead related activator 4 (FREAC-4) mRNA, complete cds. |
| GB | U62801 | -0.24 | 0.47 | -0.23 | 0.001255 | EST: AA454743 zx77e01.s1 Soares ovary tumor NbHOT Homo |
| GB | H91337 | -0.07 | -0.09 | 0.17 | 0.001257 | EST |
| GB | X54936 | 0.98 | -0.47 | -0.52 | 0.001264 | EST: AA130714 zo13h02.s1 Stratagene colon (#937204) Hom |
| INCYTE | 078114H1 | -0.24 | -0.08 | 0.32 | 0.001282 | SYNORAB01 Y09479 g1679601 Human mRNA for G-protein-coupled recepto gb104pri 90 -70 |
| GB | H38799 | 0.01 | 0.23 | -0.23 | 0.001282 | EST: Weakly similar to F59C6.4 [C.elegans] |
| GB | M38425 | -0.18 | 0.25 | -0.07 | 0.001285 | Human EGF receptor (EGFR) gene, 5' end |
| GB | AA448755 | 0.07 | -0.30 | 0.23 | 0.001303 | M-PHASE INDUCER PHOSPHATASE 2 |
| GB | T90375 | -0.48 | -0.01 | 0.49 | 0.001303 | EST |
| INCYTE | 2601724H1 | -0.15 | -0.23 | 0.38 | 0.001335 | Human integrin beta-5 subunit mRNA, comp |
| INCYTE | g819904 | -0.04 | 0.10 | -0.06 | 0.001351 | Z81585 CET05E12 Caenorhabditis elegans cosmid T05E12, complete sequence. Blastn P. 0.86 |
| GB | M29870 | 0.04 | 0.17 | -0.20 | 0.001387 | Human ras-related C3 botulinum toxin substrate (rac) mRNA, complete cds |
| GB | D29990 | 0.11 | -0.04 | -0.07 | 0.001401 | amino acid transporter E16 |
| GB | R27082 | 0.01 | -0.21 | 0.20 | 0.001403 | EST |
| GB | R33030 | -0.08 | -0.04 | 0.11 | 0.001403 | PROBABLE PROTEIN DISULFIDE ISOMERASE ER-60 PRECURSOR |
| INCYTE | 1381683H1 | 0.05 | -0.01 | -0.04 | 0.001404 | X14385 ALCRPEF Astasia longa chloroplast rps7 and tufA genes for ribosomal protein S7 and elongation factor Tu respectively. Blastn P. 0.00047 |
| GB | R31521 | -0.27 | -0.04 | 0.30 | 0.001410 | EST |
| GB | R91550 | -0.14 | -0.26 | 0.41 | 0.001424 | Human arginine-rich protein (ARP) gene, complete cds |
| GB | M97016 | -0.10 | -0.01 | 0.11 | 0.001424 | Homo sapiens osteogenic protein-2 (OP-2) mRNA, complete cds. |

Figure 9p

25/47

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|---|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| GB | AA454652 | -0.06 | 0.29 | -0.23 | 0.001451 | Human proteinase-activated receptor-2 mRNA, complete cds |
| GB | D55696 | 0.25 | 0.06 | -0.31 | 0.001461 | Human mRNA for cysteine protease, complete cds. |
| GB | M29366 | -0.13 | 0.21 | -0.08 | 0.001470 | Human epidermal growth factor receptor (ERBB3) mRNA, complete cds. |
| GB | H98534 | -0.23 | 0.27 | -0.04 | 0.001471 | Human small GTP binding protein Rab9 mRNA, complete cds |
| GB | M27492 | -0.28 | -0.37 | 0.65 | 0.001484 | Human interleukin 1 receptor mRNA, complete cds |
| GB | AA424315 | 0.00 | 0.24 | -0.24 | 0.001494 | Human mRNA for proteasome subunit p42, complete cds |
| GB | D49728 | 0.11 | 0.09 | -0.20 | 0.001501 | Human NAK1 mRNA for DNA binding protein, complete cds |
| GB | AA460727 | -0.16 | 0.14 | 0.02 | 0.001512 | Human mRNA for clathrin coat assembly protein-like, complete cds |
| GB | M93415 | -0.04 | -0.03 | 0.07 | 0.001584 | Human activin type II receptor mRNA, complete cds. |
| INCYTE | 157873H1 | -0.05 | -0.05 | 0.09 | 0.001593 | THP1PLB02 D63785 g961439 Human mRNA for LD78 alpha beta, partial gb106prt 21 10 |
| INCYTE | 2116716T6 | -0.01 | -0.12 | 0.13 | 0.001594 | BRSTTUT02 U67865 g1527201 CO6; putative potassium channel regulato gb102vrtp 10 8 |
| GB | AA448929 | 0.04 | -0.26 | 0.22 | 0.001594 | Human clone pSK1 interferon gamma receptor accessory factor-1 (AF-1) mRNA, complete cds |
| INCYTE | 637471CA2 | -0.08 | -0.12 | 0.20 | 0.001595 | EST |
| GB | AA486626 | 0.37 | -0.24 | -0.12 | 0.001614 | Poly(A)-binding protein-like 1 |
| GB | L15189 | -0.13 | 0.36 | -0.23 | 0.001617 | Homo sapiens mitochondrial HSP75 mRNA, complete cds |
| INCYTE | 4161733H1 | -0.02 | 0.07 | -0.04 | 0.001635 | Human apolipoprotein AI regulatory prote |
| GB | W60890 | 0.33 | -0.43 | 0.10 | 0.001636 | EST; Novel |
| GB | AA287196 | -0.07 | -0.25 | 0.32 | 0.001637 | Human globin gene |
| GB | X95383 | -0.42 | -0.12 | 0.54 | 0.001652 | O. cuniculus mRNA for alpha-B-crystallin |
| GB | U16953 | 0.02 | -0.11 | 0.10 | 0.001669 | Human potassium channel beta3 subunit mRNA, complete cds. |
| GB | M21571 | -0.01 | 0.03 | -0.03 | 0.001672 | Human platelet-derived growth factor (PDGFA) A chain mRNA. |
| GB | W02116 | -0.02 | -0.13 | 0.14 | 0.001674 | Human (H326) mRNA, complete cds |
| GB | M32977 | -0.17 | 0.21 | -0.04 | 0.001677 | Human heparin-binding vascular endothelial growth factor (VEGF) mRNA, complete cds |

Figure 9q

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|---|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| GB | T97257 | -0.05 | -0.01 | 0.06 | 0.001713 | EST |
| GB | W96114 | 0.23 | -0.22 | -0.01 | 0.001715 | Human hnRNP H mRNA, complete cds |
| INCYTE | 3105066H1 | -0.18 | 0.24 | -0.06 | 0.001715 | EST: COLNUCT03 L05628 g1835659 MRP; multidrug resistance-associated pro gb103prip 31 -16 |
| GB | AA486836 | -0.11 | 0.21 | -0.11 | 0.001718 | EST: Weakly similar to product of alternative splicing [D.melanogaster] |
| GB | L24470 | -0.10 | -0.10 | 0.20 | 0.001723 | Homo sapiens prostanoic FP receptor mRNA, complete cds |
| GB | AA443497 | -0.14 | -0.23 | 0.37 | 0.001731 | Human clone 23732 mRNA, partial cds |
| GB | AA487526 | 0.60 | -0.18 | -0.42 | 0.001736 | Receptor protein-tyrosine kinase EDDR1 |
| GB | D12614 | 0.21 | -0.10 | -0.10 | 0.001752 | Human mRNA for lymphotoxin (TNF-beta), complete cds. |
| INCYTE | 1946704H1 | -0.08 | -0.06 | 0.14 | 0.001760 | EST: PITUNOT01 |
| GB | T61078 | 0.20 | -0.11 | -0.09 | 0.001763 | Carbamoyl-phosphate synthetase 1, mitochondrial |
| GB | S40706 | -0.29 | 0.06 | 0.23 | 0.001783 | EST: AA015892 ze40c09.s1 Soares retina N2b4HR Homo sapi |
| GB | H25907 | 0.14 | -0.06 | -0.08 | 0.001799 | EST |
| GB | H72027 | 0.14 | -0.24 | 0.10 | 0.001799 | GELSOLIN PRECURSOR, PLASMA |
| GB | Y00106 | -0.15 | 0.39 | -0.24 | 0.001813 | Human gene for beta-adrenergic receptor (beta-2 subtype). |
| INCYTE | 5547273H1 | -0.01 | 0.05 | -0.03 | 0.001813 | EST: |
| GB | N90246 | 0.28 | -0.07 | -0.21 | 0.001813 | EST: Novel |
| GB | H59203 | 0.07 | 0.21 | -0.27 | 0.001814 | Human Cdc6-related protein (HsCDC6) mRNA, complete cds |
| GB | L29384 | 0.08 | -0.15 | 0.07 | 0.001816 | Homo sapiens (clone pcDNA-alpha 1E-1) voltage-dependent calcium channel alpha-1E-1 subunit mRNA, complete cds |
| GB | H84113 | 0.17 | -0.19 | 0.02 | 0.001823 | Retinal outer segment membrane protein 1 |
| GB | AA477082 | 0.07 | 0.17 | -0.24 | 0.001841 | Homo sapiens brain and reproductive organ-expressed protein (BRE) gene, complete cds |
| GB | Z73903 | -0.05 | -0.12 | 0.16 | 0.001841 | H.sapiens mRNA for TRPC1A |
| GB | H57941 | -0.42 | 0.46 | -0.04 | 0.001844 | Human mRNA for KIAA0386 gene, complete cds |
| GB | M81882 | -0.06 | -0.01 | 0.07 | 0.001866 | Human glutamate decarboxylase (GAD65) mRNA, complete cds |
| GB | AA401448 | -0.26 | 0.14 | 0.12 | 0.001887 | Human mRNA for KIAA0146 gene, partial cds |

Figure 9r

27/47

Primary Cell Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|---|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| INCYTE | 3358822T6 | -0.28 | -0.11 | 0.39 | 0.001973 | Y12337 HSMMPKIN H.sapiens mRNA for myotonic dystrophy protein kinase like protein. Blastn P. 0.42 |
| GB | N39161 | 0.44 | 0.26 | -0.69 | 0.001974 | CD36 antigen (collagen type I receptor, thrombospondin receptor) |
| GB | AA398883 | -0.10 | 0.17 | -0.08 | 0.001979 | EST: Similar to gb:S66896 SQUAMOUS CELL CARCINOMA ANTIGEN (HUMAN); |
| GB | R64190 | 0.35 | -0.13 | -0.22 | 0.001985 | Homo sapiens DNA-binding protein (CROC-1A) mRNA, complete cds |
| GB | T84762 | -0.15 | 0.22 | -0.06 | 0.001993 | EST |
| GB | AA056148 | -0.01 | 0.24 | -0.23 | 0.001993 | Human protein tyrosine kinase t-Ror1 (Ror1) mRNA, complete cds |
| GB | U43431 | -0.03 | -0.07 | 0.10 | 0.002024 | EST: N21546 yx60a04.s1 Soares melanocyte 2NbHM Homo sap |
| GB | X14787 | 0.45 | -0.30 | -0.14 | 0.002039 | EST: AA464630 zx85a05.r1 Soares ovary tumor NbHOT Homo |
| GB | M26685 | -0.09 | -0.06 | 0.16 | 0.002042 | Human genomic DNA, 21q region, clone: PQ |
| GB | AJ001014 | -0.22 | -0.20 | 0.42 | 0.002051 | Homo sapiens mRNA encoding RAMP1. |
| GB | S69200 | -0.04 | 0.00 | 0.05 | 0.002066 | EP3 prostanoind receptor isoform EP 3-II {alternatively spliced} [human, mRNA, 1682 nt] |
| GB | N90137 | 0.31 | -0.43 | 0.11 | 0.002066 | EST: Novel |
| GB | M21121 | 0.00 | -0.05 | 0.06 | 0.002067 | Human T cell-specific protein (RANTES) mRNA, complete cds. |
| GB | AA418689 | 0.59 | -0.35 | -0.24 | 0.002074 | DNA-DIRECTED RNA POLYMERASE II 14.4 KD POLYPEPTIDE |
| GB | T87069 | -0.18 | 0.04 | 0.14 | 0.002076 | EST |
| GB | X15357 | 0.28 | -0.11 | -0.16 | 0.002093 | Human mRNA for natriuretic peptide receptor (ANP-A receptor). |
| INCYTE | 2194901H1 | 0.08 | -0.06 | -0.02 | 0.002103 | THYRTUT03 M69013 g183690 Human guanine nucleotide-binding regulat gb104pri 50 -34 |
| GB | N63635 | 0.20 | 0.13 | -0.33 | 0.002116 | EST: Novel |
| GB | D43950 | 0.08 | 0.25 | -0.33 | 0.002158 | Human mRNA for KIAA0098 gene, partial cds |
| GB | R25895 | 0.25 | -0.40 | 0.15 | 0.002164 | EST |
| GB | AA424743 | 0.19 | -0.22 | 0.03 | 0.002173 | H.sapiens ERF-1 mRNA 3' end |
| INCYTE | 3097063H1 | 0.09 | -0.02 | -0.07 | 0.002174 | U73193 HSU73193 Human inward rectifier potassium channel Kir1.2 (Kir1.2) mRNA, partial cds. Blastn P. 0.0000000000033 |

Figure 9s

28/47

Primary Cell Gene Expression Profile

| Seq. Source | Accession | Signature | | | p-value | Source Description |
|-------------|-----------|-----------------------|----------------------|------------------|----------|--|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| GB | L41351 | -0.15 | 0.30 | -0.15 | 0.002222 | Homo sapiens prostasin mRNA, complete cds |
| INCYTE | 903559H1 | -0.24 | 0.39 | -0.15 | 0.002238 | EST: COLNNO7 |
| GB | M86849 | -0.54 | 1.06 | -0.52 | 0.002246 | Human connexin 26 (GJB2) mRNA. |
| GB | M34539 | 0.40 | -0.30 | -0.10 | 0.002253 | Human FK506-binding protein (FKBP) mRNA, complete cds |
| INCYTE | 399998H1 | -0.03 | 0.25 | -0.22 | 0.002267 | EST: PITUNOT02 g38479 Unknown. Possibly-related to neuroendocr gb97prip 10 -2 |
| INCYTE | 3320154H1 | -0.03 | -0.29 | 0.32 | 0.002287 | Human imidazoline receptor antisera-sele |
| GB | H75632 | 0.02 | 0.13 | -0.16 | 0.002305 | EST |
| INCYTE | 4875766H1 | -0.02 | 0.04 | -0.02 | 0.002306 | calcium-activated chloride channel |
| GB | AA489331 | 0.08 | -0.21 | 0.13 | 0.002308 | Human dsRNA adenosine deaminase DRADA2b (DRADA2b) mRNA, complete cds |
| INCYTE | 205581R6 | -0.07 | -0.05 | 0.12 | 0.002308 | MPHGNOT02 M29696 g186365 Human interleukin-7 receptor (IL-7) mRNA gb108pri 16 -3 |
| GB | T67104 | 0.19 | -0.22 | 0.03 | 0.002325 | EST: Weakly similar to No definition line found [C.elegans] |
| GB | R65792 | -0.42 | 0.41 | 0.01 | 0.002350 | EST: Weakly similar to similar to enoyl-CoA hydratases/isomerases [C.elegans] |
| GB | T90621 | 0.04 | -0.12 | 0.08 | 0.002372 | EST: Highly similar to 6.8 KD MITOCHONDRIAL PROTEOLIPID [Bos taurus] |
| GB | T94961 | -0.02 | -0.13 | 0.16 | 0.002394 | Human stress responsive serine/threonine protein kinase Krs-2 mRNA, complete cds |
| GB | X87344 | -0.06 | -0.19 | 0.25 | 0.002405 | EST: X87344.2 H.sapiens DMB mRNA. |
| GB | AA464067 | -0.15 | 0.23 | -0.08 | 0.002407 | Human inositol 1,3,4-trisphosphate 5/6-kinase mRNA, complete cds |
| GB | AA291163 | 0.25 | -0.37 | 0.12 | 0.002407 | Glutaredoxin (thioltransferase) |
| INCYTE | 2169635T6 | 0.04 | -0.09 | 0.05 | 0.002411 | ENDCNOT03 M77235 g184039 HH1; sodium channel alpha subunit gb103prip 99 -32 |
| GB | Y00291 | 0.05 | -0.12 | 0.07 | 0.002412 | Human hap mRNA encoding a DNA-binding hormone receptor. |
| GB | AA455281 | 0.52 | -0.28 | -0.24 | 0.002413 | EST: DEFENDER AGAINST CELL DEATH 1 |
| INCYTE | 3386845H1 | 0.18 | -0.10 | -0.08 | 0.002413 | Apelin (ligand for APJ) |
| GB | N53024 | -0.08 | -0.05 | 0.14 | 0.002432 | EST |
| GB | AA398230 | -0.10 | -0.11 | 0.21 | 0.002459 | Human mRNA for KIAA0275 gene, complete cds |
| INCYTE | 767295H1 | 0.12 | 0.10 | -0.22 | 0.002475 | LUNGNOT04 g205039 Rat K+ channel mRNA, sequence. gb97rod 13 16 |
| GB | H21107 | -0.06 | -0.07 | 0.13 | 0.002475 | Human mRNA for KIAA0164 gene, complete cds |
| GB | R70598 | 0.21 | -0.06 | -0.15 | 0.002476 | EST: Weakly similar to ALU SUBFAMILY J [H.sapiens] |
| INCYTE | 2210910T6 | -0.34 | -0.35 | 0.70 | 0.002492 | EST: SINTFET03 Y08724 g1806030 BMP1-5 gb104prip 15 6 |

Figure 9t

Endothelial Gene Expression Profile

| Seq. Source | Accession | Endothelial Signature | Epithelial Signature | Muscle Signature | p-value | Source Description |
|-------------|-----------|-----------------------|----------------------|------------------|----------|---|
| GB | X15606 | 1.90 | -0.91 | -0.99 | 0.000126 | Human mRNA for ICAM-2, cell adhesion ligand for LFA-1. |
| GB | R22412 | 1.92 | -1.03 | -0.88 | 0.000401 | Platelet/endothelial cell adhesion molecule (CD31 antigen) |
| GB | X15606 | 1.82 | -0.96 | -0.86 | 0.000215 | Human mRNA for ICAM-2, cell adhesion ligand for LFA-1. |
| GB | X15606 | 1.78 | -0.88 | -0.90 | 0.000301 | Human mRNA for ICAM-2, cell adhesion ligand for LFA-1. |
| GB | X04385 | 1.70 | -0.86 | -0.84 | 0.000412 | Human mRNA for pre-pro-von Willebrand factor. |
| GB | U27109 | 1.50 | -0.74 | -0.76 | 0.000193 | Human prepromulimerin mRNA, complete cds |
| GB | X60957 | 1.46 | -0.81 | -0.65 | 0.000052 | Human tie mRNA for putative receptor tyrosine kinase. |
| GB | T62827 | 1.36 | -0.67 | -0.69 | 0.000313 | Human nuclear phosphoprotein mRNA, complete cds |
| GB | S56805 | 1.26 | -0.61 | -0.65 | 0.000268 | Endothelin-1 |
| GB | AA489699 | 1.22 | -0.55 | -0.67 | 0.000471 | Human COP9 homolog (HCOP9) mRNA, complete cds |
| GB | R96668 | 1.07 | -0.54 | -0.53 | 0.000336 | H.sapiens mRNA for chemokine HCC-1 |
| INCYTE | 530695T6 | 1.05 | -0.51 | -0.54 | 0.000103 | EST: BRAINOT03 |
| GB | M31210 | 1.07 | -0.59 | -0.48 | 0.000289 | Human endothelial differentiation protein (edg-1) gene mRNA, complete cds |
| GB | M60315 | 1.09 | -0.66 | -0.44 | 0.000241 | Human transforming growth factor-beta (tgf-beta) mRNA, complete cds. |
| GB | X54936 | 0.98 | -0.47 | -0.52 | 0.001264 | EST: AA130714 zo13h02.s1 Stratagene colon (#937204) Hom |
| GB | X54936 | 0.91 | -0.41 | -0.49 | 0.000400 | EST: AA130714 zo13h02.s1 Stratagene colon (#937204) Hom |
| GB | AF004327 | 0.86 | -0.44 | -0.42 | 0.000406 | EST: AA125872 z123d01.s1 Soares_pregnant_uterus_NbHPU H |
| INCYTE | 285478CA2 | 0.85 | -0.40 | -0.45 | 1.000028 | EOSIHE02 g1296608 Human mRNA for chemokine CC-2 and CC-1. gb96pri 32 -74 |
| GB | D12763 | 0.95 | -0.30 | -0.66 | 0.000142 | Homo sapiens mRNA for ST2 protein |
| GB | X81120 | 0.87 | -0.48 | -0.38 | 0.000336 | H.sapiens mRNA for central cannabinoid receptor |
| GB | M31210 | 0.82 | -0.43 | -0.39 | 0.000405 | Human endothelial differentiation protein (edg-1) gene mRNA, complete cds |
| GB | AA284495 | 0.82 | -0.44 | -0.38 | 0.000356 | Human mRNA for KIAA0081 gene, partial cds |
| GB | AA181500 | 1.19 | -1.34 | 0.15 | 0.000510 | Protein kinase, cAMP-dependent, regulatory, type II, beta |
| GB | AA455067 | 0.75 | -0.29 | -0.46 | 0.000265 | Synuclein, alpha (non A4 component of amyloid precursor) |

Figure 10a

Endothelial Gene Expression Profile

| Seq Source | Accession | Endothelial Signature | Epithelial Signature | Muscle Signature | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|--|
| GB | L01639 | 0.72 | -0.40 | -0.32 | 0.000704 | Human (clone HSY3RR) neurotrophin Y receptor (NPYR) mRNA, complete cds |
| GB | AA146802 | 0.65 | -0.32 | -0.33 | 0.000277 | H.sapiens mRNA for phosphatase cyclase |
| GB | U52165 | 0.68 | -0.48 | -0.20 | 0.000013 | EST: AA150416 z105b02.s1 Soares_pregnant_uterus_NbHPU H |
| GB | R88734 | 0.58 | -0.27 | -0.31 | 0.000717 | EST |
| GB | AA418689 | 0.59 | -0.35 | -0.24 | 0.002074 | DNA-DIRECTED RNA POLYMERASE II 14.4 KD POLYPEPTIDE |
| GB | H94944 | 0.58 | -0.23 | -0.35 | 0.000346 | RAS-RELATED PROTEIN RAL-A |
| GB | L01639 | 0.60 | -0.43 | -0.17 | 0.000750 | Human (clone HSY3RR) neurotrophin Y receptor (NPYR) mRNA, complete cds |
| GB | AA487526 | 0.60 | -0.18 | -0.42 | 0.001736 | Receptor protein-tyrosine kinase EDDR1 |
| GB | AA455281 | 0.52 | -0.28 | -0.24 | 0.002413 | EST: DEFENDER AGAINST CELL DEATH 1 |
| GB | W87741 | 0.57 | -0.17 | -0.39 | 0.000063 | EST: Novel |
| GB | K01918 | 0.57 | -0.16 | -0.42 | 0.000022 | Human c-sis proto-oncogene for platelet-derived growth factor, exon 1 and flanks. |
| INCYTE | 938765H1 | 0.53 | -0.33 | -0.20 | 0.000161 | CERVNOT01 J03004 g183181 Human guanine nucleotide-binding regulat gb103prt 50 -59 |
| GB | N66942 | 0.50 | -0.29 | -0.21 | 0.000289 | H.sapiens mRNA for putative progesterone binding protein |
| GB | U40992 | 0.63 | -0.55 | -0.07 | 0.000173 | Human heat shock protein hsp40 homolog mRNA, complete cds |
| GB | M29871 | 0.57 | -0.13 | -0.45 | 0.000851 | Human ras-related C3 botulinum toxin substrate (rac) mRNA, complete cds |
| GB | AA058828 | 0.48 | -0.28 | -0.20 | 0.000157 | Fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor receptor) |
| GB | L76380 | 0.48 | -0.27 | -0.20 | 0.000083 | Homo sapiens (clone HSNME29) CGRP type 1 receptor mRNA, complete cds |
| GB | H57727 | 0.47 | -0.21 | -0.26 | 0.000356 | EST: Highly similar to PTB-ASSOCIATED SPLICING FACTOR [Homo sapiens] |
| GB | T98559 | 0.57 | -0.50 | -0.07 | 0.000246 | Ribosomal protein L17 |
| GB | L36148 | 0.43 | -0.22 | -0.21 | 0.000356 | Homo sapiens G protein-coupled receptor (GPR4) gene, complete cds. |

Figure 10b

Endothelial Gene Expression Profile

| Seq Source | Accession | Endothelial Signature | Epithelial Signature | Muscle Signature | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|---|
| GB | M85079 | 0.45 | -0.18 | -0.27 | 0.001032 | Human TGF-beta type II receptor mRNA, complete cds |
| GB | H94469 | 0.44 | -0.25 | -0.19 | 0.000661 | EST: Weakly similar to T01G9.4 [C.elegans] |
| GB | AA521243 | 0.49 | -0.36 | -0.13 | 0.000029 | PUTATIVE 60S RIBOSOMAL PROTEIN |
| GB | X14787 | 0.45 | -0.30 | -0.14 | 0.002039 | EST: AA464630 zx85a05.r1 Soares ovary tumor NbHOT Homo |
| INCYTE | 1321982H1 | 0.50 | -0.07 | -0.43 | 0.000028 | BLADNOT04-AF009225 g2327068 Human Ikb kinase alpha subunit (IKK alpha gb104prl 90 -52 |
| INCYTE | 1716001T6 | 0.40 | -0.18 | -0.22 | 0.000661 | EST: UCMCNOT02 |
| GB | AA495846 | 0.58 | -0.59 | 0.01 | 0.000256 | TRANSFORMING PROTEIN RHOB |
| GB | U88880 | 0.40 | -0.23 | -0.16 | 0.000837 | Homo sapiens Toll-like receptor 4 (TLR4) mRNA, complete cds. |
| GB | M32315 | 0.42 | -0.28 | -0.14 | 0.000107 | Human tumor necrosis factor receptor mRNA, complete cds |
| GB | L36148 | 0.35 | -0.17 | -0.18 | 0.000141 | Homo sapiens G protein-coupled receptor (GPR4) gene, complete cds. |
| GB | M34539 | 0.40 | -0.30 | -0.10 | 0.002253 | Human FK506-binding protein (FKBP) mRNA, complete cds |

Figure 10c

Epithelial Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-------------|------------|--------|----------|--|
| | | Endothelial | Epithelial | Muscle | | |
| INCYTE | 2027449H1 | -0.92 | 1.79 | -0.86 | 0.000296 | KERANOT02 g179896 Human Can19 mRNA sequence, gb97pri 68 -76 |
| GB | J05392 | -0.97 | 1.66 | -0.70 | 0.000235 | EST: AA074511 zm17e08.s1 Stratagene pancreas (#937208) |
| GB | M25315 | -0.92 | 1.58 | -0.66 | 0.000134 | Homo sapiens (clone PAT 464) potential lymphokine/cytokine mRNA, complete cds |
| GB | H97778 | -0.72 | 1.41 | -0.69 | 0.000156 | H.sapiens mRNA for E-cadherin |
| GB | U76549 | -0.92 | 1.50 | -0.58 | 0.000322 | Human cyokeratin 8 mRNA, complete cds. |
| GB | M30704 | -0.77 | 1.27 | -0.50 | 0.000093 | Human amphiregulin (AR) mRNA, complete cds, clones lambda-AR1 and lambda-AR2. |
| GB | M86849 | -0.54 | 1.06 | -0.52 | 0.002246 | Human connexin 26 (GJB2) mRNA. |
| GB | S82666 | -0.50 | 0.95 | -0.45 | 0.000176 | EST: AA459401 zx89g01.s1 Soares ovary tumor NbHOT Homo |
| GB | X76180 | -0.48 | 0.94 | -0.46 | 0.000161 | H.sapiens mRNA for lung amiloride sensitive Na+ channel protein |
| INCYTE | 1227785H1 | -0.32 | 1.07 | -0.75 | 0.000023 | AB000714 AB000714 Homo sapiens hRVP1 mRNA for RVP1, complete cds. Blastn P. 0.029 |
| INCYTE | 4872203H1 | -0.35 | 1.04 | -0.69 | 0.000043 | EST |
| GB | M58664 | -0.60 | 0.94 | -0.34 | 0.000061 | Homo sapiens CD24 signal transducer mRNA, complete cds. |
| GB | H58873 | -0.78 | 1.02 | -0.24 | 0.000048 | Human (HepG2) glucose transporter gene mRNA, complete cds |
| INCYTE | 1858095F6 | -0.55 | 0.90 | -0.35 | 0.000138 | PROSNOT18 AF013598 g2352948 Rat proton gated cation channel DRASIC m gb103rod 30 -11 |
| GB | AA393950 | -0.43 | 0.84 | -0.41 | 0.000194 | EST: zt78a10.r1 Soares testis NHT Homo sapiens cDNA clone T28442 5' similar to gb:L29007_cds1 AMILORIDE-SENSITIVE SODIUM CHANNEL ALPHA-SUBUNIT |
| GB | X12881 | -0.11 | 1.11 | -0.99 | 0.000863 | Human mRNA for cyokeratin 18. |
| GB | AA459197 | -0.39 | 0.81 | -0.43 | 0.000151 | Solute carrier family 9 (sodium/hydrogen exchanger), isoform 1 (antiporter, Na+/H+, amiloride sensitive) |
| INCYTE | 2701503T6 | -0.39 | 0.80 | -0.41 | 0.000200 | OVARTUT10 U20428 g1890631 Human SNC19 mRNA sequence. gb104pri 18 -36 |

Figure11a

Epithelial Gene Expression Profile

| Seq Source | Accession | Epithelial Gene Expression Profile | | | p-value | Source Description |
|------------|-----------|------------------------------------|----------------------|------------------|----------|---|
| | | Endothelial Signatu | Epithelial Signature | Muscle Signature | | |
| GB | X07549 | -0.42 | 0.80 | -0.38 | 0.000697 | Human mRNA for cathepsin H (E.C.3.4.22.16.). |
| GB | AA284668 | -0.78 | 0.97 | -0.19 | 0.000446 | Urokinase-type plasminogen activator |
| GB | M59911 | -0.61 | 0.88 | -0.27 | 0.000464 | EST: AA424695 zv33a02.s1 Soares ovary tumor NbHOT Homo |
| GB | AC004126 | -0.31 | 0.83 | -0.52 | 0.001123 | GPCR 101 |
| GB | M14764 | -0.35 | 0.77 | -0.42 | 0.000186 | Human nerve growth factor receptor mRNA, complete cds |
| INCYTE | 279279H1 | -0.45 | 0.70 | -0.25 | 0.000986 | Human acute phase seruma myloid Aprotel |
| GB | K03226 | -0.74 | 0.84 | -0.10 | 0.000638 | Human preprouroukinase mRNA, complete cds. |
| GB | AA411440 | -0.28 | 0.62 | -0.34 | 0.000328 | Villin 2 (ezrin) |
| GB | X70340 | -0.27 | 0.61 | -0.34 | 0.000126 | H.sapiens mRNA for transforming growth factor alpha |
| INCYTE | 4727571H1 | -0.26 | 0.61 | -0.35 | 0.000399 | X99897 H.sapiens mRNA for P/Q-type calcium channel alpha1 subunit |
| INCYTE | 2135769H1 | -0.35 | 0.59 | -0.25 | 0.000212 | ENDCNOT01 M14300 g183097 Human growth factor- inducible 2A9 gene, gb103pri 100 -88 |
| GB | M80436 | -0.27 | 0.55 | -0.28 | 0.000176 | Human platelet activating factor recepto |
| GB | AA456585 | -0.27 | 0.55 | -0.28 | 0.000186 | RecQ protein-like (DNA helicase Q1-like) |
| INCYTE | 1452259F6 | -0.26 | 0.53 | -0.27 | 0.000569 | EST: PENITUT01 D13626 g285995 KIAA00001 gb103pri 17 1 |
| GB | M63099 | -0.27 | 0.52 | -0.25 | 0.001189 | Human interleukin 1 receptor antagonist (IL1RN) gene, complete cds. |
| INCYTE | 1650566F6 | -0.26 | 0.50 | -0.25 | 0.000654 | EST: GPCR_48_TL45 PROSTUT09 g285995 KIAA00001 gb99pri 30 -9 |
| GB | AA454743 | -0.24 | 0.49 | -0.25 | 0.000510 | Human protease M mRNA, complete cds |
| GB | R83000 | -0.24 | 0.49 | -0.26 | 0.000186 | Basic transcription factor 3 |
| GB | U62801 | -0.24 | 0.47 | -0.23 | 0.001255 | EST: AA454743 zx77e01.s1 Soares ovary tumor NbHOT Homo |
| GB | R33755 | -0.21 | 0.48 | -0.27 | 0.000461 | Glutathione-S-transferase pi-1 |
| GB | U83115 | -0.16 | 0.52 | -0.37 | 0.000506 | Human non-lens beta gamma-crystallin like protein (AIM1) mRNA, partial cds. |
| GB | R06417 | 0.01 | 0.66 | -0.68 | 0.000025 | Junction plakoglobin |
| GB | AB000712 | -0.23 | 0.44 | -0.20 | 0.000441 | EST: AA430665 zw26a07.s1 Soares ovary tumor NbHOT Homo |

Figure11b

Epithelial Gene Expression Profile

| Seq Source | Accession | Signature | | | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|---|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| INCYTE | 2798465H1 | -0.16 | 0.46 | -0.30 | 0.000226 | NPOLNOT01 X04366 g29663 Human mRNA for calcium activated neutral gb103pri 98 -69 |
| GB | X70040 | -0.20 | 0.42 | -0.22 | 0.000149 | H.sapiens RON mRNA for tyrosine kinase. |
| GB | X83864 | -0.40 | 0.47 | -0.07 | 0.000285 | H.sapiens EDG-3 gene |
| GB | L29401 | -0.56 | 0.55 | 0.01 | 0.000459 | Human low density lipoprotein receptor mRNA. |
| GB | Y00106 | -0.15 | 0.39 | -0.24 | 0.001813 | Human gene for beta-adrenergic receptor (beta-2 subtype). EST: zv78h08.r1 Soares total fetus Nb2HF8 9w Homo sapiens cDNA clone 759807 5' similar to TR:G1136412 |
| GB | AA429219 | -0.17 | 0.37 | -0.21 | 0.000223 | G1136412 KIAA0176 PROTEIN ; |
| INCYTE | 903559H1 | -0.24 | 0.39 | -0.15 | 0.002238 | EST: COLNNOT07 |
| GB | M86400 | -0.10 | 0.43 | -0.32 | 0.000485 | Human phospholipase A2 mRNA, complete cds. |
| GB | M80436 | -0.21 | 0.37 | -0.16 | 0.000427 | Human platelet activating factor recepto |
| INCYTE | 2301338H1 | -0.14 | 0.39 | -0.25 | 0.000316 | BRSTNOT05 X04366 g29663 Human mRNA for calcium activated neutral gb103pri 98 -7 |
| GB | U41163 | -0.22 | 0.37 | -0.14 | 0.000904 | Human creatine transporter (SLC6A10) gene, partial cds. |

Figure 11c

Muscle Gene Expression Profile

| Seq_Source | Accession | Endothelial Signature | Epithelial Signature | Muscle Signature | p-value | Source Description |
|------------|-----------|-----------------------|----------------------|------------------|----------|--|
| GB | AA443177 | -0.88 | -0.83 | 1.71 | 0.000139 | Homo sapiens Cam kinase II isoform mRNA, complete cds |
| GB | Z74616 | -0.71 | -0.74 | 1.45 | 0.000030 | H.sapiens mRNA for prepro-alpha2(I) collagen. |
| GB | M11233 | -0.52 | -0.53 | 1.06 | 0.000745 | Human cathepsin D mRNA, complete cds. |
| GB | M11749 | -0.54 | -0.50 | 1.04 | 0.000028 | Human Thy-1 glycoprotein gene, complete cds. |
| GB | AA453712 | -0.51 | -0.47 | 0.98 | 0.000181 | Lumican |
| GB | M75165 | -0.26 | -0.80 | 1.06 | 0.000065 | EST: AA477400 zu42a03.s1 Soares ovary tumor NbHOT Homo |
| GB | J03278 | -0.41 | -0.40 | 0.81 | 0.000011 | Human platelet-derived growth factor (PDGF) receptor mRNA, complete cds |
| INCYTE | 221091076 | -0.34 | -0.35 | 0.70 | 0.002492 | EST: SINTFET03 Y08724 g1806030 BMP1-5 gb104prip 15 6 |
| GB | H96738 | -0.26 | -0.50 | 0.76 | 0.000173 | Cadherin 11 (OB-cadherin) |
| GB | U76833 | -0.37 | -0.33 | 0.69 | 0.000168 | Human integral membrane serine protease Seprase mRNA, complete cds. |
| GB | M27492 | -0.28 | -0.37 | 0.65 | 0.001484 | Human interleukin 1 receptor mRNA, complete cds |
| GB | L12350 | -0.41 | -0.25 | 0.66 | 0.000941 | Human thrombospondin 2 (THBS2) mRNA, complete cds. |
| GB | U09278 | -0.30 | -0.30 | 0.61 | 0.000039 | Human fibroblast activation protein mRNA, complete cds. |
| GB | AA243828 | -0.17 | -0.51 | 0.68 | 0.000027 | H.sapiens mRNA for receptor protein tyrosine kinase |
| GB | AA464566 | -0.22 | -0.34 | 0.56 | 0.000207 | Human mRNA for LDL-receptor related protein |
| INCYTE | 3415853H1 | -0.25 | -0.28 | 0.53 | 0.000067 | L40459 MUSLTBP Mus musculus latent transforming growth factor-beta binding protein (LTBP-3) mRNA, complete cds. |
| GB | Z67743 | -0.63 | -0.07 | 0.70 | 0.000596 | Blastn P. 1E-57 |
| GB | M36089 | -0.14 | -0.46 | 0.61 | 0.000186 | H.sapiens mRNA for CLC-7 chloride channel protein. |
| GB | X95383 | -0.42 | -0.12 | 0.54 | 0.001652 | Human DNA-repair protein (XRCC1) mRNA, complete cds. |
| GB | AA599173 | -0.07 | -0.52 | 0.59 | 0.000202 | O.cuniculus mRNA for alpha-B-crystallin |
| INCYTE | 3437994H1 | -0.20 | -0.24 | 0.44 | 0.000173 | Human monocytic leukaemia zinc finger protein (MOZ) mRNA, complete cds |
| GB | AA448194 | -0.11 | -0.41 | 0.52 | 0.000420 | EST: PENCNOT05 Z66513 g1041336 F54D5.8 gb103eukp 34 -1 |
| INCYTE | 3014785H1 | -0.21 | -0.21 | 0.42 | 0.000043 | Human duplicate spinal muscular atrophy mRNA, clone 5G7, partial cds MUSCNOT07 M33210 g532591 Human colony stimulating factor 1 recept gb106pri 100 -71 |

Figure 12a

Muscle Gene Expression Profile

| Seq Source | Accession | Muscle Gene Expression Profile | | | p-value | Source Description |
|------------|-----------|--------------------------------|----------------------|------------------|----------|---|
| | | Endothelial Signature | Epithelial Signature | Muscle Signature | | |
| GB | AJ001014 | -0.22 | -0.20 | 0.42 | 0.002051 | Homo sapiens mRNA encoding RAMP1. |
| GB | AA085318 | -0.24 | -0.18 | 0.42 | 0.001165 | Human stanniocalcin precursor (STC) mRNA, complete cds |
| GB | V00509 | -0.22 | -0.19 | 0.41 | 0.000053 | Human gene for preproenkephalin |
| GB | AA443688 | -0.18 | -0.23 | 0.41 | 0.001004 | GTP cyclohydrolase 1 (dopa-responsive dystonia) {alternative products} |
| INCYTE | 853668H1 | -0.33 | -0.12 | 0.45 | 0.000045 | NG2NOT01 U78192 g1688304 Human Edg-2 receptor mRNA, complete cds. gb104pri 67 -35 |
| GB | AA488969 | 0.00 | -0.57 | 0.57 | 0.000153 | Human mRNA for KIAA0313 gene, complete cds |
| GB | R65759 | -0.13 | -0.30 | 0.43 | 0.000368 | EST |
| GB | R91550 | -0.14 | -0.26 | 0.41 | 0.001424 | Human arginine-rich protein (ARP) gene, complete cds |
| INCYTE | 2601724H1 | -0.15 | -0.23 | 0.38 | 0.001335 | Human integrin beta-5 subunit mRNA, comp |
| GB | T96731 | -0.24 | -0.14 | 0.39 | 0.000652 | |
| GB | M94054 | -0.09 | -0.35 | 0.44 | 0.000863 | EST: Highly similar to HLA CLASS II HISTOCOMPATIBILITY ANTIGEN, DX BETA CHAIN PRECURSOR [Homo sapiens] |
| GB | X00351 | -0.35 | -0.09 | 0.43 | 0.000429 | Human lysyl oxidase (LOX) mRNA, complete cds. |
| INCYTE | 3248833H1 | -0.20 | -0.16 | 0.36 | 0.000711 | Human mRNA for beta-actin. |
| GB | U37791 | -0.17 | -0.18 | 0.35 | 0.000237 | HumanmRNAencodingRAMP1. |
| GB | AA435938 | -0.19 | -0.16 | 0.35 | 0.000038 | Homo sapiens clone rasi-1 matrix metalloproteinase RASI-1 mRNA, complete cds. |
| GB | AA443497 | -0.14 | -0.23 | 0.37 | 0.001731 | EST: zu01a08.s1 Soares_testis_NHT Homo sapiens cDNA clone 730550 3' similar to TR:G817957 G817957 GLYCINE RECEPTOR SUBUNIT ALPHA 4 ; mRNA sequence. |
| GB | U83410 | -0.16 | -0.19 | 0.34 | 0.000301 | EST: Human clone 23732 mRNA, partial cds Human CUL-2 (cul-2) mRNA, complete cds. |

Figure 12b

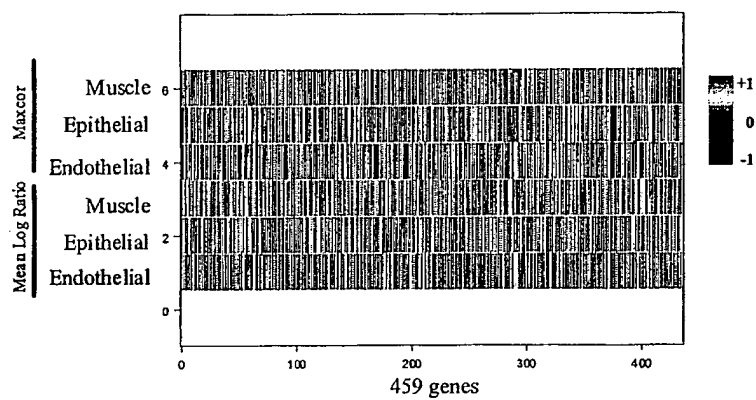


Figure 13

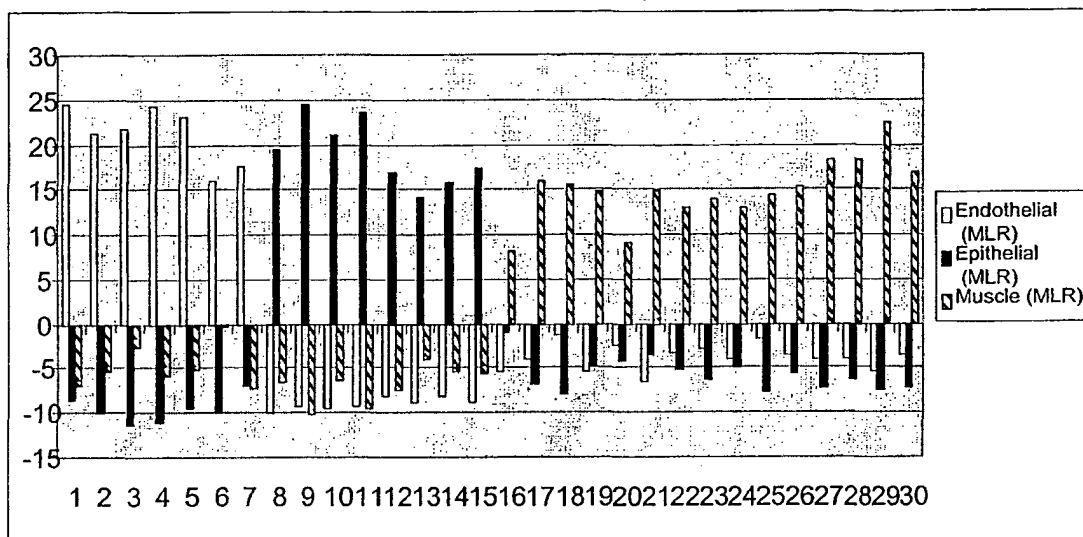


Figure 14

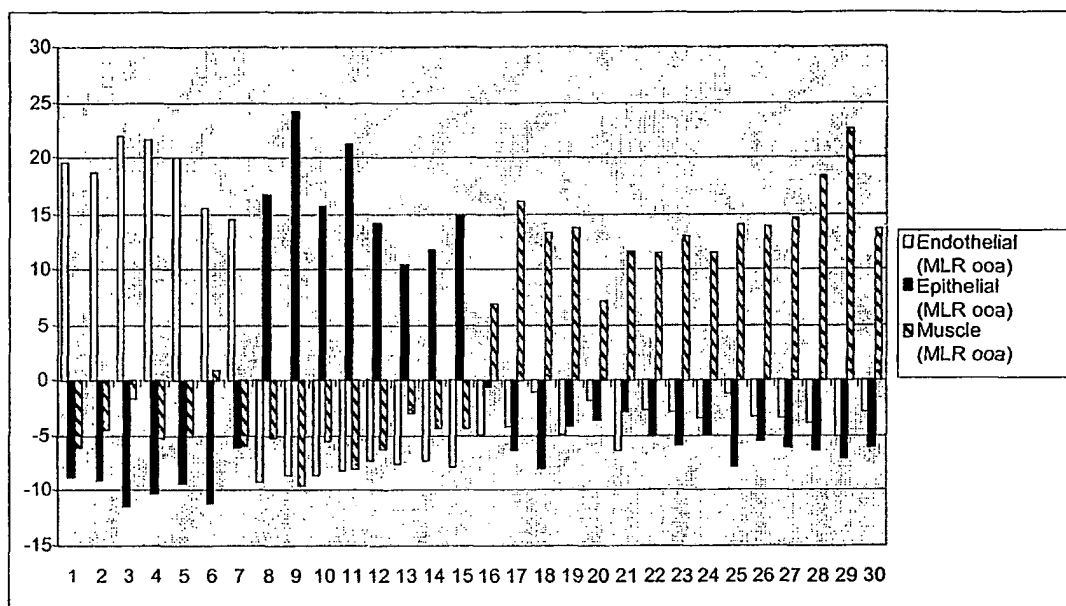


Figure 15

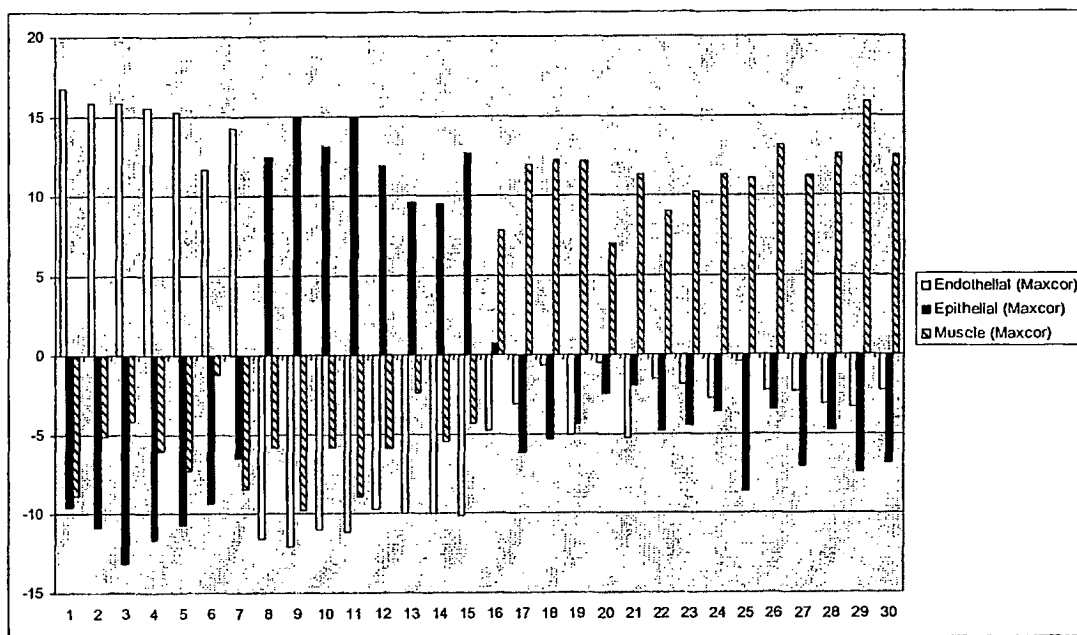


Figure 16

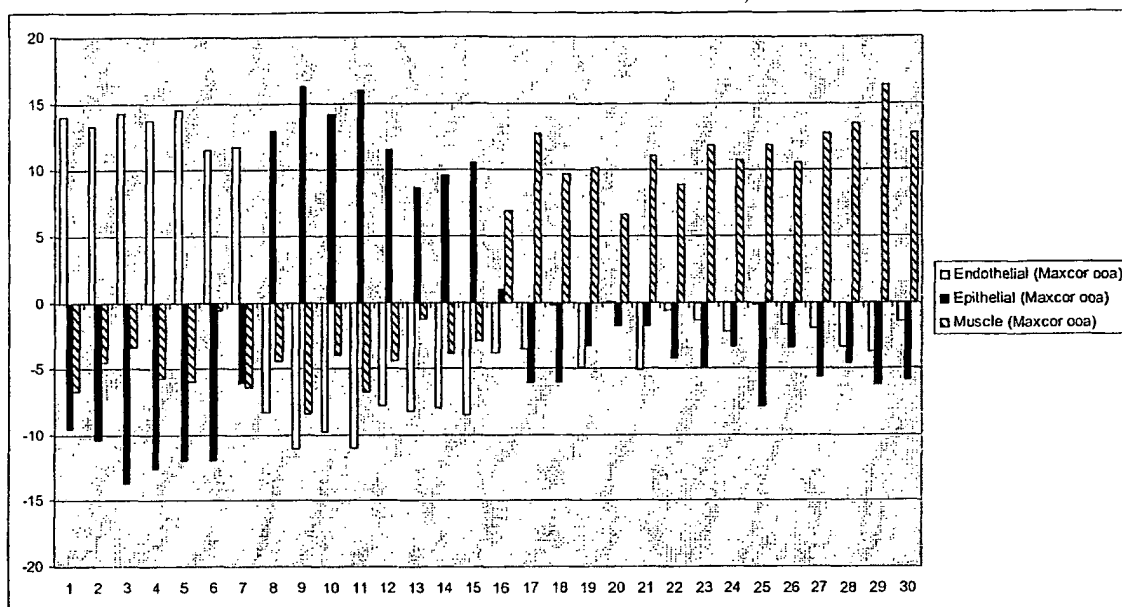


Figure 17

| Seq Id No: | Accession | keratinocyte | Mammary | Bronchial | Prostate | Renal cortical | Renal prox tubule | Small airway | Renal |
|------------|-----------|--------------|----------|-----------|----------|----------------|-------------------|--------------|----------|
| 187 | T70429 | 4.547079 | 0.313402 | 0.86323 | 0.483849 | 0.230928 | 0.175945 | 1.176632 | 0.208935 |
| 188 | Z67743 | 3.876564 | 0.42035 | 0.507089 | 1.040867 | 0.447039 | 0.960801 | 0.346956 | 0.400334 |
| 189 | M33882 | 3.595819 | 0.278746 | 0.390244 | 0.557491 | 1.045296 | 0.752613 | 0.641115 | 0.738676 |
| 190 | M13755 | 3.214564 | 0.301691 | 0.49935 | 0.530559 | 1.102731 | 1.144343 | 0.551365 | 0.655397 |
| 191 | M10901 | 3.024 | 1.264 | 0.576 | 0.752 | 0.416 | 0.608 | 0.96 | 0.4 |
| 192 | M23317 | 2.728242 | 1.83659 | 0.611012 | 0.998224 | 0.316163 | 0.476021 | 0.703375 | 0.330373 |
| 193 | L12350 | 2.695082 | 0.531148 | 0.734426 | 1.147541 | 0.616393 | 1.101639 | 0.622951 | 0.55082 |
| 194 | 2499967T6 | 2.585789 | 1.629116 | 1.109185 | 0.987868 | 0.298094 | 0.519931 | 0.506066 | 0.363951 |
| 195 | 093603H1 | 2.524456 | 1.984222 | 1.032502 | 0.916377 | 0.30041 | 0.403913 | 0.426633 | 0.411486 |
| 196 | X57527 | 2.505837 | 0.544747 | 0.88716 | 0.513619 | 0.747082 | 1.291829 | 0.59144 | 0.918288 |
| 197 | g1949404 | 2.387974 | 1.643522 | 1.088046 | 0.916249 | 0.355047 | 0.475304 | 0.692913 | 0.440945 |
| 198 | H79778 | 2.33954 | 0.884995 | 0.709748 | 0.814896 | 0.779847 | 0.788609 | 0.884995 | 0.797371 |
| 199 | X72781 | 2.326241 | 1.34279 | 1.229314 | 1.040189 | 0.406619 | 0.312057 | 1.106383 | 0.236407 |
| 200 | 5171695H1 | 2.295567 | 1.093596 | 1.103448 | 0.995074 | 0.384236 | 0.35468 | 1.497537 | 0.275862 |
| 201 | K00650 | 2.252427 | 0.634304 | 1.177994 | 0.440129 | 1.061489 | 0.504854 | 0.673139 | 1.255663 |
| 202 | U26644 | 2.216777 | 1.259189 | 1.28935 | 0.980207 | 0.233742 | 0.211122 | 1.651272 | 0.158341 |
| 203 | T98394 | 2.20885 | 0.948673 | 1.146903 | 0.495575 | 0.552212 | 0.849558 | 1.231858 | 0.566372 |
| 204 | L26336 | 2.186139 | 0.69703 | 0.570297 | 0.570297 | 1.346535 | 0.950495 | 0.665347 | 1.013861 |
| 205 | Z29330 | 2.166376 | 1.891798 | 0.823735 | 0.881908 | 0.477022 | 0.611984 | 0.511926 | 0.635253 |
| 206 | 4694921H1 | 2.1473 | 1.558101 | 1.060556 | 1.008183 | 0.484452 | 0.549918 | 0.733224 | 0.458265 |
| 207 | N39161 | 2.125352 | 1.020169 | 0.791152 | 0.813706 | 0.839731 | 0.397311 | 1.136413 | 0.876166 |
| 208 | U41070 | 2.094808 | 0.884876 | 1.571106 | 0.848758 | 0.613995 | 0.577878 | 0.939052 | 0.469526 |
| 209 | D89078 | 2.072072 | 0.828829 | 1.495495 | 0.828829 | 0.630631 | 0.576577 | 1.027027 | 0.540541 |
| 210 | M27602 | 2.025641 | 1.589744 | 1.064103 | 0.974359 | 0.5 | 0.410256 | 1.064103 | 0.371795 |
| 211 | M24594 | 2.020761 | 0.525952 | 0.719723 | 0.747405 | 1.051903 | 0.99654 | 1.107266 | 0.83045 |
| 150 | M86849 | 1.716609 | 0.280263 | 2.554895 | 1.784173 | 0.090084 | 0.205192 | 1.283703 | 0.08508 |
| 27 | M75165 | 1.456765 | 1.717192 | 2.213632 | 0.602238 | 0.618515 | 0.272635 | 0.29705 | 0.821974 |
| 169 | 2027449H1 | 1.41744 | 1.707792 | 2.074212 | 1.654917 | 0.24026 | 0.342301 | 0.461039 | 0.102041 |
| 212 | 1442951T6 | 1.414274 | 2.287121 | 0.922067 | 0.712059 | 0.574241 | 0.843314 | 0.446267 | 0.800656 |
| 213 | AA486305 | 1.302932 | 2.442066 | 0.666356 | 0.342485 | 1.0349 | 0.748255 | 0.323872 | 1.139134 |
| 131 | M63099 | 1.269036 | 0.436548 | 2.263959 | 1.269036 | 0.365482 | 0.274112 | 1.796954 | 0.324873 |

Figure 18a

| Seq Id No: | Accession | keratinocyte | Mammary | Bronchial | Prostate | Renal cortical | Renal prox tubule | Small airway | Renal |
|------------|-----------|--------------|----------|-----------|----------|----------------|-------------------|--------------|----------|
| 214 | M59373 | 1.198984 | 0.948349 | 2.011854 | 1.144793 | 0.724809 | 0.636749 | 0.514818 | 0.819644 |
| 215 | AA047666 | 1.186226 | 0.93324 | 2.063247 | 1.163739 | 0.382291 | 0.376669 | 1.54603 | 0.348559 |
| 216 | AA488969 | 1.181664 | 2.037351 | 0.692699 | 0.611205 | 0.63837 | 1.113752 | 0.814941 | 0.910017 |
| 217 | I09069 | 1.17889 | 1.425634 | 1.88074 | 2.582591 | 0.169979 | 0.180946 | 0.422207 | 0.159013 |
| 218 | M63904 | 1.168646 | 1.083135 | 1.539192 | 2.014252 | 0.294537 | 0.256532 | 1.35867 | 0.285036 |
| 138 | H98334 | 1.167653 | 0.489152 | 0.757396 | 0.804734 | 0.710059 | 2.130178 | 0.757396 | 1.183432 |
| 219 | H78484 | 1.15122 | 0.643902 | 0.663415 | 0.741463 | 2.321951 | 0.839024 | 0.760976 | 0.878049 |
| 220 | 3386358H1 | 1.142857 | 0.474725 | 1.072527 | 0.879121 | 0.703297 | 0.615385 | 2.514286 | 0.597802 |
| 221 | R07560 | 1.125926 | 0.82963 | 1.204938 | 0.888889 | 0.523457 | 0.602469 | 2.449383 | 0.375309 |
| 222 | 4730434H1 | 1.116751 | 0.426396 | 1.461929 | 1.116751 | 0.649746 | 0.609137 | 2.192893 | 0.426396 |
| 223 | R53652 | 1.107692 | 0.615385 | 2.092308 | 0.8 | 0.861538 | 0.769231 | 1.261538 | 0.492308 |
| 224 | AA398883 | 1.076453 | 0.562691 | 2.006116 | 0.66055 | 0.733945 | 1.46789 | 0.978593 | 0.513761 |
| 225 | AA598776 | 1.069692 | 2.424635 | 0.735818 | 0.557536 | 1.128039 | 0.936791 | 0.269044 | 0.878444 |
| 226 | AA423867 | 1.053556 | 2.156277 | 0.660228 | 0.965759 | 0.60755 | 0.428446 | 1.675154 | 0.453029 |
| 227 | Y14734 | 1.045149 | 2.789625 | 1.260327 | 0.630163 | 0.422671 | 0.49952 | 0.845341 | 0.507205 |
| 228 | R93782 | 1.044335 | 0.550246 | 0.7422 | 0.689655 | 1.425287 | 2.055829 | 0.407225 | 0.985222 |
| 229 | 2723646H1 | 1.027933 | 0.513966 | 1.564246 | 1.162011 | 0.648045 | 0.625698 | 2.011173 | 0.446927 |
| 230 | U46005 | 0.992908 | 0.778116 | 0.911854 | 1.14691 | 0.636272 | 0.656535 | 2.289767 | 0.587639 |
| 231 | AA479252 | 0.967033 | 0.791209 | 0.879121 | 0.683761 | 1.074481 | 0.791209 | 2.06105 | 0.752137 |
| 232 | T70122 | 0.954274 | 0.779324 | 0.689198 | 1.134526 | 0.795229 | 0.827038 | 2.078197 | 0.742213 |
| 78 | S82666 | 0.951351 | 2.205405 | 0.73033 | 1.566366 | 0.73033 | 0.163363 | 1.475075 | 0.177778 |
| 233 | 3447387H2 | 0.942966 | 0.51711 | 1.247148 | 0.912548 | 0.882129 | 0.821293 | 2.159696 | 0.51711 |
| 234 | 2863932H1 | 0.9 | 0.575 | 0.8 | 0.825 | 1.05 | 0.9 | 2.075 | 0.875 |
| 235 | 5208013H1 | 0.845528 | 1.105691 | 1.322493 | 0.737127 | 0.758808 | 0.650407 | 2.081301 | 0.498645 |
| 236 | 873192H1 | 0.843956 | 0.386813 | 0.861538 | 0.914286 | 0.984615 | 2.338462 | 0.632967 | 1.037363 |
| 237 | R83270 | 0.838021 | 0.538021 | 0.938894 | 0.419011 | 1.101843 | 0.876819 | 2.071775 | 0.915616 |
| 238 | L12060 | 0.834356 | 1.006135 | 1.079755 | 0.809816 | 0.883436 | 0.736196 | 2.159509 | 0.490798 |
| 239 | I909132F6 | 0.832215 | 2.52349 | 0.832215 | 0.832215 | 0.751678 | 0.751678 | 0.993289 | 0.483221 |
| 240 | AA292583 | 0.829876 | 0.829876 | 0.630705 | 1.145228 | 0.962656 | 0.746888 | 2.024896 | 0.829876 |
| 241 | 2581223T6 | 0.814159 | 0.679646 | 2.024779 | 0.920354 | 0.665487 | 0.665487 | 1.465487 | 0.764602 |
| 242 | T94781 | 0.808602 | 0.378495 | 0.808602 | 0.963441 | 1.015054 | 2.511828 | 0.636559 | 0.877419 |

Figure 18b

| Seq Id No: | Accession | keratinocyte | Margmary | Bronchial | Prostate | Renal cortical | Renal prox tubule | Small airway | Renal |
|------------|-----------|--------------|----------|-----------|----------|----------------|-------------------|--------------|----------|
| 243 | N67917 | 0.7979 | 1.126859 | 3.107612 | 0.657918 | 0.88189 | 0.279965 | 0.713911 | 0.433946 |
| 64 | 290375H1 | 0.787879 | 0.989899 | 1.414141 | 2.020202 | 0.707071 | 0.727273 | 0.848485 | 0.505051 |
| 244 | M69226 | 0.768293 | 0.768293 | 2.012195 | 1.341463 | 0.378049 | 0.560976 | 1.756098 | 0.414634 |
| 245 | AA011215 | 0.743276 | 0.586797 | 1.017115 | 0.899756 | 0.821516 | 0.723716 | 2.288509 | 0.919315 |
| 246 | 1693028H1 | 0.733624 | 0.89083 | 0.681223 | 1.344978 | 0.908297 | 0.69869 | 2.061135 | 0.681223 |
| 247 | 2519384H1 | 0.730097 | 0.792233 | 0.807767 | 1.335922 | 0.823301 | 0.714563 | 2.066019 | 0.730097 |
| 248 | R31521 | 0.723404 | 0.957447 | 0.829787 | 0.659574 | 0.808511 | 0.680851 | 2.617021 | 0.723404 |
| 249 | H96850 | 0.719393 | 0.754063 | 0.7974 | 1.109426 | 0.667389 | 0.702059 | 2.626219 | 0.624052 |
| 250 | X95383 | 0.703297 | 0.43956 | 0.492308 | 0.58022 | 1.178022 | 2.602198 | 0.931868 | 1.072527 |
| 251 | AA453663 | 0.696517 | 0.577114 | 1.273632 | 0.716418 | 1.014925 | 0.79602 | 2.149254 | 0.776119 |
| 252 | AA504204 | 0.695652 | 0.811594 | 0.672464 | 0.742029 | 1.02029 | 1.02029 | 2.226087 | 0.811594 |
| 253 | N59542 | 0.678571 | 0.455357 | 0.5 | 0.5 | 1.508929 | 1.339286 | 0.383929 | 2.633929 |
| 254 | AA599176 | 0.665169 | 0.683146 | 1.132584 | 0.808989 | 1.006742 | 0.898876 | 2.103371 | 0.701124 |
| 37 | AA443688 | 0.657825 | 0.636605 | 0.721485 | 0.615385 | 0.827586 | 0.976127 | 1.018568 | 2.546419 |
| 106 | X56134 | 0.652316 | 1.839008 | 0.506197 | 0.706588 | 1.042661 | 2.045662 | 0.049054 | 1.158513 |
| 255 | T58002 | 0.639309 | 0.506839 | 2.37293 | 1.071274 | 1.174946 | 0.575954 | 0.956084 | 0.702664 |
| 123 | X12881 | 0.631706 | 0.470163 | 0.62608 | 1.055254 | 2.340366 | 1.353426 | 0.269238 | 1.253767 |
| 256 | M76672 | 0.627178 | 1.240418 | 2.341463 | 1.686411 | 0.45993 | 0.432056 | 0.752613 | 0.45993 |
| 257 | H73961 | 0.621601 | 0.696193 | 1.498057 | 0.640249 | 0.901321 | 0.640249 | 2.455322 | 0.547009 |
| 258 | L76631 | 0.595238 | 0.47619 | 0.642857 | 0.642857 | 1.238095 | 2.404762 | 0.928571 | 1.071429 |
| 259 | L78207 | 0.590497 | 0.879217 | 1.468263 | 2.012332 | 0.899528 | 0.821182 | 0.645629 | 0.683351 |
| 260 | 2211267F6 | 0.584927 | 0.512936 | 0.710911 | 0.485939 | 1.088864 | 2.654668 | 0.368954 | 1.592801 |
| 261 | M54933 | 0.58427 | 1.423221 | 2.367041 | 1.707865 | 0.419476 | 0.419476 | 0.808989 | 0.269663 |
| 262 | AA402960 | 0.582996 | 0.615385 | 0.809717 | 0.777328 | 1.036437 | 2.072874 | 1.263158 | 0.842105 |
| 263 | D14695 | 0.580609 | 0.913019 | 0.647091 | 0.576177 | 1.010526 | 0.686981 | 2.699169 | 0.886427 |
| 264 | X87159 | 0.578723 | 0.612766 | 0.885106 | 0.817021 | 1.32766 | 0.953191 | 2.144681 | 0.680851 |
| 265 | U59167 | 0.568421 | 0.463158 | 0.715789 | 0.757895 | 1.052632 | 1.221053 | 2.189474 | 1.031579 |
| 266 | 1649377H1 | 0.561988 | 0.561983 | 0.859504 | 0.826446 | 0.92562 | 2.512397 | 1.190083 | 0.561983 |
| 267 | L22206 | 0.550607 | 0.582996 | 0.744939 | 0.809717 | 2.234818 | 0.939271 | 1.263158 | 0.874494 |
| 268 | X06989 | 0.543909 | 0.736544 | 0.566572 | 0.532578 | 0.589235 | 1.133144 | 3.184136 | 0.713881 |
| 269 | 3107995H1 | 0.540084 | 0.540084 | 0.742616 | 0.877637 | 1.113924 | 1.181435 | 2.396624 | 0.607595 |

Figure 18c

| Seq Id No: | Accession | keratinocyte | Mammary | Bronchial | Prostate | Renal cortical | Renal prox tubule | Small airway | Renal |
|------------|-----------|--------------|----------|-----------|----------|----------------|-------------------|--------------|----------|
| 57 | AA292676 | 0.537764 | 0.410876 | 1.003021 | 0.622356 | 2.030211 | 0.827795 | 1.268882 | 1.299094 |
| 70 | D12763 | 0.536489 | 0.315582 | 1.293886 | 0.946746 | 0.883629 | 0.457594 | 3.092702 | 0.473373 |
| 270 | M17017 | 0.533333 | 0.853333 | 0.853333 | 0.8 | 2.053333 | 0.933333 | 1.36 | 0.613333 |
| 271 | L33404 | 0.526946 | 2.299401 | 1.021956 | 1.229541 | 0.750499 | 0.510978 | 1.229541 | 0.431138 |
| 272 | 2726949H1 | 0.518519 | 0.555556 | 0.888889 | 0.851852 | 0.962963 | 2.37037 | 1.296296 | 0.555556 |
| 273 | 2726952H1 | 0.517241 | 0.517241 | 0.862069 | 0.793103 | 0.896552 | 2.655172 | 1.206897 | 0.551724 |
| 274 | H51066 | 0.512535 | 0.401114 | 0.64624 | 0.824513 | 1.470752 | 2.339833 | 1.069638 | 0.735376 |
| 275 | AA446565 | 0.508124 | 0.732644 | 0.78382 | 0.768095 | 1.353028 | 2.002954 | 0.59675 | 1.252585 |
| 276 | T99650 | 0.505747 | 0.45977 | 0.574713 | 0.62069 | 0.873563 | 3.241379 | 0.91954 | 0.804598 |
| 277 | 463614H1 | 0.504505 | 0.576577 | 0.864865 | 0.864865 | 1.081081 | 1.369369 | 2.018018 | 0.720721 |
| 278 | Y00318 | 0.492813 | 0.361396 | 0.50924 | 0.459959 | 1.084189 | 3.022587 | 0.788501 | 1.281314 |
| 279 | M64349 | 0.489664 | 1.349007 | 0.518849 | 0.573976 | 2.010539 | 1.044183 | 0.713417 | 1.300365 |
| 104 | H57180 | 0.489209 | 0.517986 | 0.834532 | 0.805755 | 2.215827 | 0.892086 | 1.093525 | 1.151079 |
| 280 | U04357 | 0.48855 | 0.519084 | 0.732824 | 0.793893 | 2.59542 | 0.854962 | 1.251908 | 0.763359 |
| 281 | 4161733H1 | 0.48731 | 0.609137 | 0.893401 | 0.974619 | 1.055838 | 1.015228 | 2.395939 | 0.568528 |
| 282 | M60278 | 0.482353 | 1.152941 | 1.411765 | 0.811765 | 0.764706 | 0.564706 | 2.176471 | 0.635294 |
| 283 | X61498 | 0.48 | 1.048889 | 0.746667 | 0.746667 | 2.133333 | 0.871111 | 0.924444 | 1.048889 |
| 284 | M37724 | 0.48 | 0.512 | 0.768 | 0.8 | 1.184 | 2.432 | 1.184 | 0.64 |
| 285 | 1322305T6 | 0.479616 | 2.532374 | 1.323741 | 1.016787 | 0.690647 | 0.613909 | 0.863309 | 0.479616 |
| 286 | 1284795H1 | 0.470588 | 0.5 | 1.264706 | 1.264706 | 0.852941 | 0.823529 | 2.264706 | 0.558824 |
| 287 | 349590H1 | 0.467153 | 0.525547 | 0.788321 | 0.759124 | 0.992701 | 1.284672 | 2.452555 | 0.729927 |
| 288 | M28638 | 0.466302 | 0.276867 | 0.422587 | 0.408015 | 1.384335 | 3.497268 | 0.582878 | 0.961749 |
| 160 | 4727571H1 | 0.465696 | 0.393624 | 0.532225 | 0.371448 | 2.361746 | 1.61885 | 0.310464 | 1.945946 |
| 289 | W85914 | 0.46438 | 2.237467 | 1.182058 | 1.034301 | 0.527704 | 0.633245 | 1.245383 | 0.675462 |
| 290 | 3526532H1 | 0.45977 | 0.521073 | 1.164751 | 0.888889 | 0.950192 | 1.042146 | 2.421456 | 0.551724 |
| 291 | M54894 | 0.457831 | 0.409639 | 0.578313 | 0.60241 | 2.506024 | 1.180723 | 0.963855 | 1.301205 |
| 292 | 3382940 | 0.455696 | 0.455696 | 0.886076 | 0.734177 | 0.835443 | 0.911392 | 3.265823 | 0.455696 |
| 293 | X07820 | 0.454545 | 0.575758 | 1 | 2.545455 | 0.909091 | 0.818182 | 1.212121 | 0.484848 |
| 294 | R00275 | 0.45283 | 0.467925 | 0.558491 | 0.528302 | 0.845283 | 0.860377 | 3.54717 | 0.739623 |
| 295 | AA029889 | 0.442211 | 0.348409 | 0.80402 | 0.482412 | 0.763819 | 2.921273 | 0.696817 | 1.541039 |
| 296 | L08096 | 0.438819 | 0.57384 | 0.742616 | 0.776371 | 1.012658 | 2.632911 | 1.248945 | 0.57384 |

Figure 18d

| Seq Id No: | Accession | keratinocyte | Mammary | Bronchial | Prostate | Renal cortical | Renal prox tubule | Small airway | Renal |
|------------|-----------|--------------|----------|-----------|----------|----------------|-------------------|--------------|----------|
| 297 | R32756 | 0.436526 | 0.311804 | 0.74833 | 0.890869 | 1.728285 | 2.03118 | 0.685969 | 1.167038 |
| 49 | AA488073 | 0.433812 | 0.325359 | 0.937799 | 0.433812 | 2.347687 | 0.905901 | 1.097289 | 1.518341 |
| 298 | 556963H1 | 0.424581 | 0.446927 | 0.826816 | 0.715084 | 0.759777 | 0.804469 | 3.463687 | 0.558659 |
| 299 | M37722 | 0.421907 | 0.340771 | 0.503043 | 0.454361 | 1.022312 | 2.953347 | 0.600406 | 1.703854 |
| 300 | AA448094 | 0.415584 | 0.292208 | 0.448052 | 0.415584 | 1.376623 | 2.844156 | 0.376623 | 1.831169 |
| 301 | AA489400 | 0.414169 | 1.416894 | 0.588556 | 0.566757 | 0.959128 | 2.179837 | 0.871935 | 1.002725 |
| 032 | g1751443 | 0.407407 | 0.358025 | 0.691358 | 2.271605 | 1.037037 | 0.506173 | 1.703704 | 1.024691 |
| 0303 | 2731293H1 | 0.401544 | 0.30888 | 0.957529 | 0.432432 | 1.281853 | 0.571429 | 2.795367 | 1.250965 |
| 304 | AA521431 | 0.392707 | 0.291725 | 0.695652 | 0.392707 | 1.492286 | 1.952314 | 0.437588 | 2.345021 |
| 035 | AA233079 | 0.383562 | 0.438356 | 0.657534 | 0.684932 | 2.164384 | 0.876712 | 1.041096 | 1.753425 |
| 036 | M26383 | 0.383333 | 0.316667 | 0.55 | 0.466667 | 1.383333 | 2.883333 | 0.65 | 1.366667 |
| 307 | 3530687H1 | 0.382166 | 0.407643 | 0.789809 | 1.070064 | 2.012739 | 1.197452 | 1.070064 | 1.070064 |
| 308 | N41062 | 0.371134 | 0.412371 | 0.639175 | 0.721649 | 1.546392 | 2.082474 | 1.092784 | 1.134021 |
| 183 | 903559H1 | 0.37037 | 0.311111 | 1.214815 | 0.444444 | 1.422222 | 0.607407 | 2.207407 | 1.422222 |
| 309 | AA419108 | 0.369231 | 0.298901 | 0.43956 | 0.457143 | 1.441758 | 2.813187 | 0.773626 | 1.406593 |
| 310 | J03561 | 0.366197 | 1.028169 | 0.859155 | 0.464789 | 2.464789 | 0.957746 | 0.802817 | 1.056338 |
| 311 | M34064 | 0.362369 | 0.390244 | 0.641115 | 0.66899 | 1.254355 | 2.759582 | 0.97561 | 0.947735 |
| 312 | 1334463H1 | 0.35468 | 0.35468 | 1.615764 | 1.852217 | 0.610837 | 0.571429 | 2.246305 | 0.394089 |
| 313 | AA486085 | 0.348515 | 0.744554 | 0.50165 | 0.971617 | 2.006601 | 0.987459 | 0.744554 | 1.69505 |
| 314 | M64749 | 0.337778 | 0.388889 | 2.88 | 1.6 | 0.551111 | 0.515556 | 0.888889 | 0.337778 |
| 315 | M60278 | 0.330794 | 0.618063 | 1.479869 | 0.739935 | 0.696409 | 0.417845 | 3.299238 | 0.417845 |
| 316 | K02765 | 0.328767 | 0.591781 | 0.810959 | 0.635616 | 0.920548 | 2.761644 | 1.227397 | 0.723288 |
| 310 | J03561 | 0.326531 | 0.755102 | 0.908163 | 0.469388 | 2.969388 | 1.030612 | 0.632653 | 0.908163 |
| 317 | AA460571 | 0.31746 | 0.31746 | 1.174603 | 0.444444 | 1.015873 | 1.015873 | 2.555556 | 1.15873 |
| 174 | 4872203H1 | 0.306011 | 0.091075 | 0.830601 | 1.315118 | 1.260474 | 0.52459 | 2.185792 | 1.486339 |
| 157 | 268 | 0.302267 | 0.246851 | 0.397985 | 0.347607 | 3.511335 | 0.675063 | 0.710327 | 1.808564 |
| 318 | 1226731H1 | 0.289738 | 1.448692 | 0.450704 | 0.515091 | 1.046278 | 2.478873 | 0.595573 | 1.17505 |
| 319 | 264 | 0.286765 | 0.147059 | 0.474265 | 1.084559 | 0.738971 | 0.433824 | 3.488971 | 1.345588 |
| 320 | X54925 | 0.285714 | 0.396313 | 0.451613 | 2.073733 | 1.253456 | 1.437788 | 1.658986 | 0.442396 |
| 3173 | 1227785H1 | 0.285389 | 0.11537 | 0.570778 | 1.16888 | 1.190133 | 0.522201 | 2.556357 | 1.590892 |
| 321 | H16637 | 0.279365 | 0.304762 | 0.444444 | 0.380952 | 1.320635 | 3.619048 | 0.55873 | 1.092063 |

Figure 18e

| Seq Id No: | Accession | keratinocyte | Mammary | Bronchial | Prostate | Renal cortical | Renal prox tubule | Small airway | Renal |
|------------|-----------|--------------|----------|-----------|----------|----------------|-------------------|--------------|----------|
| 322 | 2496910H1 | 0.272545 | 0.320641 | 0.46493 | 0.432866 | 1.667335 | 3.142285 | 0.609218 | 1.09018 |
| 323 | 3558269H1 | 0.264591 | 0.29572 | 0.544747 | 0.404669 | 1.929961 | 1.089494 | 1.120623 | 2.350195 |
| 324 | T90375 | 0.248939 | 0.724187 | 0.565771 | 0.384724 | 1.471004 | 1.459689 | 0.701556 | 2.44413 |
| 325 | U81233 | 0.234483 | 0.275862 | 0.427586 | 0.524138 | 3.462069 | 1.089655 | 0.827586 | 1.158621 |
| 326 | M84683 | 0.208605 | 0.177314 | 0.490222 | 0.292047 | 3.588005 | 1.011734 | 0.792699 | 1.439374 |
| 158 | 279279H1 | 0.206406 | 1.864769 | 0.768683 | 0.704626 | 0.690391 | 2.298932 | 1.024911 | 0.441281 |
| 327 | 1484836T6 | 0.196248 | 1.466089 | 0.380952 | 0.34632 | 3.578644 | 0.496392 | 0.507937 | 1.027417 |
| 328 | T52894 | 0.182077 | 0.216216 | 0.295875 | 0.534851 | 1.672831 | 3.834993 | 0.614509 | 0.648649 |
| 165 | AA454743 | 0.158612 | 1.258984 | 0.39653 | 0.297398 | 3.925651 | 0.465923 | 0.406444 | 1.090458 |
| 166 | U62801 | 0.154176 | 1.027837 | 0.394004 | 0.316916 | 4.471092 | 0.4197 | 0.359743 | 0.856531 |
| 329 | M23699 | 0.126582 | 1.324895 | 0.7173 | 0.700422 | 0.953586 | 2.708861 | 0.987342 | 0.481013 |

Figure 18f

SEQUENCE LISTING

SEQ ID NO: 1

>gi|32623|emb|X15606.1|HSICAM2 Human mRNA for ICAM-2, cell adhesion ligand for LFA-1

5 CTAAAGATCTCCCTCCAGGCAGCCCTTGGCTGGTCCCTGCGAGCCCGTGGAGACT
GCCAGAGATGTCTCTTTTCGGTTACAGGACCCTGACTGTGGCCCTCTTCACCCTG
ATCTGCTGTCCAGGATCGGATGAGAAGGTATTCGAGGTACACGTGAGGCCAAAG
AAGCTGGCGGTTGAGCCCAAAGGGTCCCTCGAGGTCAACTGCAGCACCACCTGT
10 AACCAGCCTGAAGTGGGTGGTCTGGAGACCTCTCTAAATAAGATTCTGCTGGACG
AACAGGCTCAGTGGAACATTACTTGGTCTCAAACATCTCCCATGACACGGTCCT
CCAATGCCACTTCACCTGCTCCGGGAAGCAGGAGTCAATGAATTCCAACGTCAGC
GTGTACCAGCCTCCAAGGCAGGTCATCCTGACACTGCAACCCACTTTGGTGGCTG
TGGGCAAGTCCTTCACCATGAGTGCAGGGTGCCACCGTGGAGCCCCCTGGACA
15 GCCTCACCTCTTCTGTTCGGTGGCAATGAGACTCTGCACTATGAGACCTTCGG
GAAGGCAGCCCCTGCTCCGCAGGAGGCCACAGCCACATTCAACAGCACGGCTGA
CAGAGAGGATGGCCACCACAACCTTCTCCTGCCTGGCTGTGCTGGACTTGATGTCT
CGCGGTGGCAACATCTTTCACAAACACTCAGCCCCGAAGATGTTGGAGATCTATG
AGCCTGTGTCGACAGCCAGATGGTCATCATAGTCACGGTGGTGTGCGGTGTTGCT
20 GTCCCTGTTTCGTGACATCTGTCCTGCTCTGCTTCATCTTCGGCCAGCACTTGCGCC
AGCAGCGGATGGGCACCTACGGGGTGCGAGCGGCTTGGAGGAGGCTGCCCCAGG
CCTTCCGGCCATAGCAACCATGAGTGGCATGGCCACCACCACGGTGGTCACTGG
AACTCAGTGTGACTCCTCAGGGTTGAGGTCCAGCCCTGGCTGAAGGACTGTGACA
GGCAGCAGAGACTTGGGACATTGCCTTTTCTAGCCCCGAATACAAACACCTGGACT
25 T

SEQ ID NO: 2

>gi|777193|gb|R22412.1|R22412 yh23b03.s1 Soares placenta Nb2HP Homo sapiens cDNA clone IMAGE:130541 3' similar to contains Alu repetitive element;

30 TTTTGTCAAAGAGCAAAGGTCAAATTTATTTAATACAACATCCACGAGGGTCCCT
GCAGCTNTGTCACTGAGGCAAACAGGAAAAGTGATTTTGGCTAGGCGTGGTTCTC
ATCTGTGAAATCCACAGCGCAATGACAGCAGCCTNTNTCCCACCCACTCAAGAC
ACTNTCAGGANITGNTTAAGACCTCAGGAGACCANTTNTTTAGCAAGCAATTTTG
TTTTTTGTTTTTTTTGAGATGGGNTTCTCACTCTGTCACTCAGGCTGGGAGTGCAG
35 TGGCGCGATCTCCCGCTCACTANAACNCCGTTTCCNGGGGGGTCAAGGGGNTA
ATTTACCTCAGGCCCTTG

SEQ ID NO: 3

>gi|37946|emb|X04385.1|HSVWFR1 Human mRNA for pre-pro-von Willebrand factor

40 GCAGCTGAGAGCATGGCCTAGGGTGGGCGGCACCATTGTCCAGCAGCTGAGTTT
CCCAGGGACCTTGGAGATAGCCGCAGCCCTCATTTGCAGGGGAAGATGATTCCT
GCCAGATTTGCCGGGGTGCTGCTTGTCTTGGCCCTCATTTTGCCAGGGACCCTTTG
TGCAGAAGGAACCTCGCGGCAGGTCATCCACGGCCCGATGCAGCCTTTTCGGAAG
TGACTTCGTCAACACCTTTGATGGGAGCATGTACAGCTTTGCGGGATACTGCAGT
45 TACCTCCTGGCAGGGGGCTGCCAGAAACGCTCCTTCTCGATTATTGGGGACTTCC
AGAATGGCAAGAGAGTGAGCCTCTCCGTGTATCTTGGGGAATTTTTTGACATCCA
TTTGTGTTGTCAATGGTACCGTGACACAGGGGGACCAAAGAGTCTCCATGCCCTAT
GCCTCCAAAGGGCTGTATCTAGAAACTGAGGCTGGGTACTACAAGCTGTCCGGT

GAGGCCTATGGCTTTGTGGCCAGGATCGATGGCAGCGGCAACTTTCAAGTCCTGC
TGTCAGACAGATACTTCAACAAGACCTGCGGGCTGTGTGGCAACTTTAACATCTT
TGCTGAAGATGACTTTATGACCCAAGAAGGGACCTTGACCTCGGACCCCTTATGAC
TTTGCCAACCTCATGGGCTCTGAGCAGTGGAGAACAGTGGTGTGAACGGGCATCTC
5 CTCCCAGCAGCTCATGCAACATCTCCTCTGGGGAAATGCAGAAGGGCCTGTGGG
AGCAGTGCCAGCTTCTGAAGAGCACCTCGGTGTTTGCCCGCTGCCACCCTCTGGT
GGACCCCGAGCCTTTTGTGGCCCTGTGTGAGAAGACTTTGTGTGAGTGTGCTGGG
GGGCTGGAGTGCGCCTGCCCTGCCCTCCTGGAGTACGCCCGGACCTGTGCCCAGG
AGGGAATGGTGTGTACGGCTGGACCGACCACAGCGCGTGCAGCCCAGTGTGCC
10 CTGCTGGTATGGAGTATAGGCAGTGTGTGTCCCCTTGCGCCAGGACCTGCCAGAG
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GCC

SEQ ID NO: 4

5 >gi|396814|emb|X60957.1|HSTIEMR Human tie mRNA for putative receptor tyrosine kinase
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SEQ ID NO: 5

30 >gi|298590|gb|S56805.1|S56805 preproendothelin 1 {alternatively transcribed} [human,
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SEQ ID NO: 6

>gi|181948|gb|M31210.1|HUMEDG Human endothelial differentiation protein (edg-1) gene
mRNA, complete cds

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SEQ ID NO: 7

>gi|339561|gb|M60315.1|HUMTGFB Human transforming growth factor-beta BMP protein
(tgf-beta) mRNA, complete cds
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TTGTGAACCTGGTGGAGTACGACAAGGAGTTCTCCCTCGTCAGCGACACCACAA
AGAGTTCAAGTTCAACTTATCCCAGATTCTTGAGGGTGAGGTGGTGACGGCTGCA
GAATTCGCGCATCTACAAGGACTGTGTTATGGGGAGTTTAAAAACCAAATTTTC
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35 TTTGTTGGACACCCGTGTAGTATGGGCCTCAGAAGAAGGCTGGCTGGAATTTGAC
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AGCTGAGCGTGGTGACAAGGGATGGAGTCCACGTCCACCCCGAGCCGCAGGCC
TGGTGGGCAGAGACGGCCCTTACGATAAGCAGCCCTTCATGGTGGCTTTCTTCAA
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40 ACAGAGTCGTAATCGCTCTACCCAGTCCCAGGACGTGGCGCGGGTCTCCAGTGCT
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GCTGCCAATTACTGTGATGGAGAATGCTCCTTCCCACTCAACGCACACATGAATG
CAACCAACCACGCGATTGTGCAGACCTTGGTTACCTTATGAACCCCGAGTATGT
45 CCCCAAACCGTGCTGTGCGCAACTAAGCTAAATGCCATCTCGGTTCTTTACTTT
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CCTAGATTACATCTGCCTTAAAAAAACACGGAAGCACAGTTGGAGGTGGGACGA
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AGCAAGCTGAGTTTGGATGTCTGTAGCATAAGGTCTGGTAACTGCAGAAACATA
ACCGTGAAGCTCTTCCTACCCTCCTCCCCAAAAACCCACCAAAATTAGTTTTAG
CTGTAGATCAAGCTATTTGGGGTGTTTGTAGTAAATAGGGAAAATAATCTCAAA
5 GGAGTTAAATGTATTCTTGGCTAAAGGATCAGCTGGTTCAGTACTGTCTATCAAA
GGTAGATTTTACAGAGAACAGAAATCGGGGAAGTGGGGGGAACGCCTCTGTTCA
GTTCAATCCCAGAAGTCCACAGGACGCACAGCCCAGGCCACAGCCAGGGCTCCA
CGGGGCGCCCTTGTCTCAGTCATTGCTGTTGTATGTTTCGTGCTGGAGTTTGTG
TGTGAAAATACACTTATTTTCAGCCAAAACATAACCATTTCTACACCTCAATCCTCC
10 ATTTGCTGTACTCTTTGCTAGTACCAAAAGTAGACTGATTACACTGAGGTGAGGC
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CAGAACGGTCTTTGACCAGCACATTAACCTTCTGGACTGCCGGCTCTAGTACCTT
TTCAGTAAAGTGGTCTCTGCCTTTTTACTATACAGCATAACCACGCCACAGGGTT
AGAACCAACGAAGAAAATAAAATGAGGGTGCCAGCTTATAAGAATGGTGTAG
15 GGGGATGAGCATGCTGTTTATGAACGGAAATCATGATTTCCCTGTAGAAAGTGA
GGCTCAGATTAAATTTTAGAATATTTTCTAAATGTCTTTTTTACAATCATGTGACT
GGGAAGGCAATTTTCACTAAACTGATTAAATAATACATTTATAATCTACAACCTG
TTTGCACCTACAGCTTTTTTTGTAAATATAAACTATAATTTATTGTCTATTTTATAT
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20 TGGGGGGTGTCTGTTGTTGGGCGGGCGG

SEQ ID NO: 8

>285478CA2

GCCAGCCCTGCCTGCCACCAGGAGGATGAAGGTCTCCGTGGCTGCCCTCTCCTG
25 CCTCATGCTTGTTACTGCCCTTGGATCCCAGGCCCGGGTCACAAAAGATGCAGAG
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TCTGGAGGAGAAAGATTGGTCCTCAGATGACCCTTTCTCATGCTGCAGGATTCCA
TGCTACTAGTGCTGACTGCTGCATCTCCTACACCCACGAAGCATCCCGTGTTCA
CTCCTGGAGAGTTACTTTGAAACGAACAGCGAGTGCTCCAAGCCGGGTGTCATCT
30 TCCTCACCAAGAAGGGGCGACGTTTCTGTGCCAACCCAGTGATAAGCAAGTTCA
GGTTTGCATGAGAATGCTGAAGCTGGACACACGGATCAAGACCAGGAAGAATTG
AACTTGTCAAGGTGAAGGGACACAAGTTGCCAGCCACCAACTTTCTTGCCTCAAC
TACCTTCCTGAATTATTTTTTAAGAAGCATTTATTCTTGTGTTCTGGATTTAGAG
CAATTCATCTAATAAACAGTTTC

35

SEQ ID NO: 9

>gi|1764967|gb|AA181500.1|AA181500 zp16h08.r1 Stratagene fetal retina 937202 Homo
sapiens cDNA clone IMAGE:609663 5' similar to gb:A12297 CAMP-DEPENDENT
PROTEIN KINASE TYPE II-BETA REGULATORY CHAIN (HUMAN);

CTAGTATGNGTTTTACTTATTCAGACTGATAATCATATTAGTGACTATCCCCATGT
40 AAGAGGGCACTTGGCAATTAAACATGCTACACAGCATGGCATCACTTTTTTTTAT
AACTCATTAACACAGTAAAATTTAATCATTTTTGTTTTAAAGTTTTCTAGCTTG
ATAAGTTATGTGCTGGCCTTGCCANTTGGTGAAATGGTATAAAATATCATATGC
AGTTTTAAAACCTTTTTATTTTTGCAATAAAGTACATTTGACTTTGTTGGCATA
45 ATGTCAGTAACATAATATCCAGTGGTTTTATGGACAGGCAATTTAGTCATTAT
GATAATAAGGAAAACAGTGTTTTAGATGAGAGATCNTTAATGNNTTTTTCCCCCA
TCCAGCCATATANCCCGCCTTTTTTTAATTTGCCAATCCCCGGTATTCCCATGGCC
TTTAAAAAATTGGNCNTGGACCATTTAAAGGGCCCCAAGTTTTGGTTTTTT

SEQ ID NO: 10

>gi|2177843|gb|AA455067.1|AA455067 aa04c11.s1 Soares_NhHMPu_S1 Homo sapiens
cDNA clone IMAGE:812276 3' similar to gb:L08850 SYNUCLEIN (HUMAN);

5 GCAATGAGATAACGTTTTATTTTAATTCTCACCATTTATATACAAACACAAGTGA
ATAAAACACATCGCAAAATGGTAAAATTTTCATATTTAGTATTTATAGGTGCATAG
TTTCATGCTCACATATTTTTGAGTATTATATATATTAACAAATTTTACAATACGTC
ATTATTCTTAGACAGTATCATTAAAAGACACCTAAAAATCTTATAATATATGATA
GCAAATCACTAACAACCTTCTGAACAACAGCAACAAAAAATAGTGAGGATTTAG
10 AAATAAGTGGTAGTCACTTAGGTGTTTTTAATTTGTTTTAACATCGTAGATTGAA
GCCACAAAATCCACAGCACACAAAGACCCTGCTACCATGTATTCACTTCAGTGAA
AGGGAAGCACCGAAATGCTGAGTGGGGGCAGGTACAGATACATCAATCACTGCT
GATGGAAGACTTCGAGATACAC

SEQ ID NO: 11

15 >gi|338201|gb|K01918.1|HUMSISA1 Human c-sis proto-oncogene for platelet-derived
growth factor, exon 1 and flanks

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AGCCGTGCCCGCCGCCCGGGCCCGCCGAGGGCGCACACGCTCCCCCCCCCT
ACCCGGCCCGGGCGGGAGTTTGCACCTCTCCCTGCCCGGGTGCTCGAGCTGCCGT
20 TGCAAAGCCAACCTTTGGAAAAAGTTTTTTGGGGGAGACTTGGGCCTTGAGGTGCC
CAGCTCCGCGCTTTCCGATTTTGGGGGCCTTTCCAGAAAATGTTGCAAAAAGCT
AAGCCGGCGGGCAGAGGAAAACGCCTGTAGCCGGCGAGTGAAGACGAACCATC
GACTGCCGTGTTCTTTCTCTTGGAGGTTGGAGTCCCCTGGGCGCCCCCACAC
GGCTAGACGCCTCGGCTGGTTCGCGACGCAGCCCCCGGCCGTGGATGCTGCACT
25 CGGGCTCGGGATCCGCCCAGGTAGCCGGCCTCGGACCCAGGTCCTGCGCCCAGG
TCCTCCCCTGCCCCCAGCGACGGAGCCGGGGCCGGGGGCGGCGGCGCCGGGGG
CATGCGGGTGAGCCGCGGCTGCAGAGGCCTGAGCGCCTGATCGCCGCGGACCCG
AGCCGAGCCCACCCCCCTCCCCAGCCCCCACCCTGGCCGCGGGGGCGGCGCGC
TCGATCTACGCGTTCGGGGCCCCGCGGGGCCGGGCCCGGAGTCGGCATGAATCG
30 CTGCTGGGCGCTCTTCTGTCTCTGCTGCTACCTGCGTCTGGTCAGCGCCGAGG
TGAGTGCCACGGCGGCTGGGGCTGGTTCTTCAATCATTACCTTCGCCCCCCCCCTC
TGACCGCCCCCTCCTCTCCCTGCAGTGAACCTTTGGACCCTTGCAACCGCGAGCCT
GACGCCGGGCGCTGGGTGACCTCTTCGGGCTGGGAGCGAGGTCCGGGGGTGACA
GGCTCTAAGGGAAGGCAACAGCGGTGGCTTCTTTCCAACCGGCGGGCGAATCT
35 GGCTCCCTAAGCCGTTCCGTGTGCGGGGAGGGTGTGTGTGGCCCTGTCCCCCACC
CTTTGGGAACCCGAGAACAAGCCCCTCCCGGCCGGGGGAGAGGGGGTGGGGTGG
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CGGCTTAGGCTCTGTCTGCCATCGGCTTGCCAGGAGGTGCAAGCTT

40 SEQ ID NO: 12

>938765H1

GCTGCACCGTGAGCGCCGAGGACAAGGCGGCGGCCGAGCGCTCTAAGATGATCG
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CTGTTGGGTGCTGGGGAGTCAGGGAAGAGCACCATCGTCAAGCAGGTGTAGGTC
45 ATTCCCGGGGGTTGCTTATTCCGGGGGGGATTCCCGCAGTACGCGCGGTTGTCTA
CAGCAACAACATCCAGTCCATCATGGCCATTGTCAAAGCCATGGGCAACCTGCA
GATCGACTTTGCCGACCCCT

SEQ ID NO: 13

>gi|1219067|gb|N66942.1|N66942 za48c12.s1 Soares fetal liver spleen 1NFLS Homo sapiens
cDNA clone IMAGE:295798 3'

AAGACAGAGTGGACTGTTACAAATGATTTTGCAAAATACAAAAATAGATATACT
TCCACTGAATGCTTTAATCATTTTTCCGGGCACTCTCATCTTTGGTTCTTCCTCAT
5 CTGAGTACACAGTGGGCTCCTCCCCCTCCTTCAGCAGTTTGCCACAGTGATGATA
CTTGAAAGTGAAGTGAAGTCACTCCAGTCACTCAGAGTCTCCTGCTGGGCAGCAGTG
AGGTCAAGAAAGTCACTCGTACTCATCCTTCAGTGCTTCCTTATCCAGGCAAAATG
TGGCAAGGCCCTGGATGCATCTCTCCAGCAAAGACCCCATACGGCCCCCTCTTTC
AAAAACAAAACCAAAGATCAATTCTTTATTAGACAGTCAATTTCTCTGTGATTTA
10 TACACAGAAAATGGGCTTCCCTANT

SEQ ID NO: 14

>gi|190825|gb|M29871.1|HUMRACB Human ras-related C3 botulinum toxin substrate (rac)
mRNA, complete cds

15 ATGCAGGCCATCAAGTGTGTGGTGGTGGGAGATGGGGCCGTGGGCAAGACCTGC
CTTCTCATCAGCTACACCACCAACGCCTTTCCCGGAGAGTACATCCCCACCGTGT
TTGACAACTATTCAAGCAATGTGATGGTGGACAGCAAGCCAGTGAACCTGGGGC
TGTGGGACACTGCTGGGCAGGAGGACTACGACCGTCTCCGGCCGCTCTCCTATCC
ACAGACGGACGTCTTCCTCATCTGCTTCTCCCTCGTCAGCCCAGCCTCTTATGAGA
20 ACGTCCGCGCCAAGTGGTTCCAGAAAGTGCGGCACCACTGCCCCAGCACACCCA
TCATCCTGGTGGGCACCAAGCTGGACCTGCGGGACGACAAGGACACCATCGAGA
AACTGAAGGAGAAGAAGCTGGCTCCCATCACCTACCCGCAGGGCCTGGCACTGG
CCAAGGAGATTGACTCGGTGAAATACCTGGAGTGCTCAGCCCTCACCCAGAGAG
GCCTGAAAACCGTGTTTCGACGAGGCCATCCGGGCCGTGCTGTGCCCTCAGCCCAC
25 GCGGCAGCAGAAGCGCGCCTGCAGCCTCCTCTAG

SEQ ID NO: 15

>gi|1551654|gb|AA058828.1|AA058828 zf66f10.s1 Soares retina N2b4HR Homo sapiens
cDNA clone IMAGE:381931 3' similar to contains element MER36 repetitive element ;

30 GTGTTTTTGGAAGTTTATTATATGAAGATGGTATACAAAATACATTCATCATGAC
TAGAAATATAGGACCAAACCATGTCTGTCTTATATCTGTAGCATATATTCTTGGTT
TGTATAAAAAGTAACTTTAAAATTCCAGTTTCCTTAAATAGTTATGCACAAAACAC
ACATACACCCACACACACACACACACACACACATACAGTTACACCACT
GTCGGCCAAAGATGCACTCCTCTTTAATCAATTTAAATGAGGCTAGCGAGTATC
35 TGTTTGATGTTTGCATTCTTGTGGGCTAGGAAACAAGGCACGGGTCCCTAAAATT
AACATCTCGGTGTCACTTCTTGGACTGACAAGACACAGACTTGCACATGGTTTCA
GCCCCATTCCACCCAGACTGTTCCACGTACATTATCTCAGAACTCTGAAAGGAA
GTGCTCGTTCTTTGTTAGTGCCAACCATTTTTGTGATAAATGGCAAATGATTGGGA
TATTATCAGTTAATTCATGTTTCAATTTCAAGTGCTATTTTAATGGACAAGCACTTG
40 TAACTAGCCCATTTATTACAAGTCTCCATTTTTTTCCACATTAANCTCCNGAGGGAC
CATCTTTGGCCGATGGAGG

SEQ ID NO: 16

>gi|1010559|gb|H57727.1|H57727 yr21b09.s1 Soares fetal liver spleen 1NFLS Homo sapiens
cDNA clone IMAGE:205913 3'

45 GTTGGGGGAGGACGGGTTGCCGACTCGCCTACCTAGCGGTCTCTTGATTGTCGAC
ATTTTGTTGGCATAGGTTTATGTAGAGACGTATACATATATATAGACACACTGTC
TATAAATCTAGGCCTGTATCCGGTGTCCGAGGCGAACTCAGTAAGATGATGTTAA
GAGGAAACCTGAAGCAAGTGCGCATTGAGAAAAACCCGGCCCGCCTTCGCGCCC

TGGAGTCCGCGGTGGGCGAGACGAGCCGGCGCCCGNCNAGCCATTGGCGCTCGC
TCTTGCCGGGGAGCCANCNCGCCCGCGCCCGGCCTCCAGAGGACCACCCGGACG
AGGAGATGGGGTTCACTATCGACATCAAGAGTTTNCCTCAAGCCGGGCG

5 SEQ ID NO: 17

>gi|598152|gb|L36148.1|HUMGPR4A Homo sapiens G protein-coupled receptor (GPR4)
gene, complete cds

ATAATTCCATCCCTCCTCCAACCTTTTCCCTCTCAAGCTCTGCCCTTCCCAGCCCAG
CCCAGCCTACCCAACCTCATCTCTTCCCTGTAGACCACATCCCACCATGTTCCCCT
10 GAGCCTCCAAGGAAGGGGCTCAGGGGCCCCATGGCCTCCCGCTCCCTGTGGCCC
CACAGCCCCCGTGGGCCAGGGGAAGCGCCCCAGAAGCCGAAGTGCCCAACCATGG
GCAACCACACGTGGGAGGGCTGCCACGTGGACTCGCGCGTGGACCACCTCTTTCC
GCCATCCCTCTACATCTTTGTATCGGCGTGGGGCTGCCACCAACTGCCTGGCT
CTGTGGGCGGCCTACCGCCAGGTGCAACAGCGCAACGAGCTGGGCGTCTACCTG
15 ATGAACCTCAGCATCGCCGACCTGCTGTACATCTGCACGCTGCCGCTGTGGGTGG
ACTACTTCCTGCACCACGACAACTGGATCCACGGCCCCGGGTCCTGCAAGCTCTT
TGGGTTTCATCTTCTACACCAATATCTACATCAGCATCGCCTTCCTGTGCTGCATCT
CGGTGGACCGCTACCTGGCTGTGGCCCAACCACTCCGCTTCGCCCCGCTGCGCCG
CGTCAAGACCGCCGTGGCCGTGAGCTCCGTGGTCTGGGCCACGGAGCTGGGCGC
20 CAACTCGGCGCCCCTGTTCCATGACGAGCTCTTCCGAGACCGCTACAACCACACC
TTCTGCTTTGAGAAGTTCCCCATGGAAGGCTGGGTGGCCTGGATGAACCTCTATC
GGGTGTTTCGTGGGCTTCTCTTCCCCTGGGCGCTCATGCTGCTGTCGTACCGGGG
CATCCTGCGGGCCGTGCGGGGCAGCGTGTCCACCGAGCGCCAGGAGAAGGCCAA
GATCAAGCGGCTGGCCCTCAGCCTCATCGCCATCGTGCTGGTCTGCTTTGCGCCC
25 TATCACGTGCTCTTGCTGTCCCGCAGCGCCATCTACCTGGGCGCCCTGGGACT
GCGGCTTCGAGGAGCGCGTCTTTTCTGCATACCACAGCTCACTGGCTTTCACCAG
CCTCAACTGTGTGGCGGACCCCATCCTCTACTGCCTGGTCAACGAGGGCGCCCGC
AGCGATGTGGCCAAGGCCCTGCACAACCTGCTCCGCTTCTGGCCAGCGACAAGC
CCCAGGAGATGGCCAATGCCTCGCTCACCTGGAGACCCCACTCACCTCCAAGA
30 GGAACAGCACAGCCAAAGCCATGACTGGCAGCTGGGCGGCCACTCCGCCTCCCA
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CACAGAATCCCCAGTTTTTCCCCTCTCATCCACAGTCCCTTCTCTCCTGG

SEQ ID NO: 18

35 >gi|339569|gb|M85079.1|HUMTGFBIIIR Human TGF-beta type II receptor mRNA, complete
cds

GTTGGCGAGGAGTTTCTGTTTCCCCCGCAGCGCTGAGTTGAAGTTGAGTGAGTC
ACTCGCGCGCACGGAGCGACGACACCCCCGCGCGTGCACCCGCTCGGGACAGGA
GCCGGACTCCTGTGCAGCTTCCCTCGGCCGCCGGGGGCTCCCCGCGCCTCGCCG
40 GCCTCCAGGCCCTCCTGGCTGGCGAGCGGGCGCCACATCTGGCCCGCACATCTG
CGCTGCCGGCCCCGGCGCGGGGTCCGGAGAGGGCGCGGCGCGGAGCGCAGCCAG
GGGTCCGGGAAGGCGCCGTCCGTGCGCTGGGGGCTCGGTCTATGACGAGCAGCG
GGGTCTGCCATGGGTGCGGGGCTGCTCAGGGGCCTGTGGCCGCTGCACATCGTCC
TGTGGACGCGTATCGCCAGCACGATCCCACCGCACGTTTCAAGTTCGGTTAATAA
45 CGACATGATAGTCACTGACAACAACGGTGCAAGTCAAGTTTCCACAACCTGTGTAA
ATTTTGTGATGTGAGATTTTCCACCTGTGACAACCAGAAATCCTGCATGAGCAAC
TGCAGCATCACCTCCATCTGTGAGAAGCCACAGGAAGTCTGTGTGGCTGTATGGA
GAAAGAATGACGAGAACATAACACTAGAGACAGTTTGCCATGACCCCAAGCTCC
CCTACCATGACTTTATTCTGGAAGATGCTGCTTCTCCAAAGTGCATTATGAAGGA

AAAAAAAAAGCCTGGTGAGACTTTCTTCATGTGTTCCCTGTAGCTCTGATGAGTGC
AATGACAACATCATCTTCTCAGAAGAATATAACACCAGCAATCCTGACTTGTTGC
TAGTCATATTTCAAGTGACAGGCATCAGCCTCCTGCCACCACTGGGAGTTGCCAT
ATCTGTCATCATCATCTTCTACTGCTACCGCGTTAACCGGCAGCAGAAGCTGAGT
5 TCAACCTGGGAAACCGGCAAGACGCGGAAGCTCATGGAGTTCAGCGAGCACTGT
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TCAACCACAACACAGAGCTGCTGCCCATTGAGCTGGACACCCTGGTGGGGAAAG
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10 GAGAAGGACATCTTCTCAGACATCAATCTGAAGCATGAGAACATACTCCAGTTCC
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CCTTCCACGCCAAGGGCAACCTACAGGAGTACCTGACGCGGCATGTCATCAGCT
GGGAGGACCTGCGCAAGCTGGGCAGCTCCCTCGCCCGGGGGATTGCTCACCTCC
ACAGTGATCACACTCCATGTGGGAGGCCCAAGATGCCCATCGTGCACAGGGACC
15 TCAAGAGCTCCAATATCCTCGTGAAGAACGACCTAACCTGCTGCCTGTGTGACTT
TGGGCTTTCCCTGCGTCTGGACCCTACTCTGTCTGTGGATGACCTGGCTAACAGT
GGGCAGGTGGGAACTGCAAGATACATGGCTCCAGAAGTCCTAGAATCCAGGATG
AATTTGGAGAATGCTGAGTCCTTCAAGCAGACCGATGTCTACTCCATGGCTCTGG
TGCTCTGGGAAATGACATCTCGCTGTAATGCAGTGGGAGAAGTAAAAGATTATG
20 AGCCTCCATTTGGTTCCAAGGTGCGGGAGCACCCCTGTGTGAAAGCATGAAGG
ACAACGTGTTGAGAGATCGAGGGCGACCAGAAATTCCCAGCTTCTGGCTCAACC
ACCAGGGCATCCAGATGGTGTGTGAGACGTTGACTGAGTGCTGGGACCACGACC
CAGAGGCCCGTCTCACAGCCCAGTGTGTGGCAGAACGCTTCAGTGAGCTGGAGC
ATCTGGACAGGCTCTCGGGGAGGAGCTGCTCGGAGGAGAAGATTCTGAAGACG
25 GCTCCCTAAACACTACCAAATAGCTCTTATGGGGCAGGCTGGGCATGTCCAAAG
AGGCTGCCCCCTCTACCAAAA

SEQ ID NO: 19

>gi|37464|emb|X14787.1|HSTS Human mRNA for thrombospondin

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CCGGCCGCGCGCTCCGGTACACACAGGATCCCTGCTGGGCACCAACAGCTCCA
CCATGGGGCTGGCCTGGGGACTAGGCGTCCTGTTCCCTGATGCATGTGTGTGGCAC
CAACCGCATTCAGAGTCTGGCGGAGACAACAGCGTGTGTTGACATCTTTGAACTC
ACCGGGGCGCGCCGCAAGGGGTCTGGGCGCCGACTGGTGAAGGGCCCCGACCC
35 TCCAGCCCAGCTTTCCGCATCGAGGATGCCAACCTGATCCCCCTGTGCCTGATG
ACAAGTTCCAAGACCTGGTGGATGCTGTGCGGGCAGAAAAGGGTTTCTCTCTTCT
GGCATCCCTGAGGCAGATGAAGAAGACCCGGGGCACGCTGCTGGCCCTGGAGCG
GAAAGACCACTCTGGCCAGGTCTTCAGCGTGGTGTCCAATGGCAAGGCGGGCAC
CCTGGACCTCAGCCTGACCGTCCAAGGAAAGCAGCACGTGGTGTCTGTGGAAGA
40 AGCTCTCCTGGCAACCGGCCAGTGGAAGAGCATCACCTGTTTGTGCAGGAAGA
CAGGGCCCAGCTGTACATCGACTGTGAAAAGATGGAGAATGCTGAGTTGGACGT
CCCCATCCAAAGCGTCTTCACCAGAGACCTGGCCAGCATCGCCAGACTCCGCATC
GCAAAGGGGGGCGTCAATGACAATTTCCAGGGGGTGCTGCAGAATGTGAGGTTT
GTCTTTGGAACCACACCAGAAGACATCCTCAGGAACAAAGGCTGCTCCAGCTCT
45 ACCAGTGTCTCCTCACCTTGACAACAACGTGGTGAATGGTTCCAGCCCTGCCA
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TCTCCTGTGATGAGCTGTCCAGCATGGTCCTGGAACCTCAGGGGCCTGCGCACC
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GTTCTGATGGAGAATGCTGTCCTCGCTGTTGGCCCAGCGACTCTGCGGACGATG
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5 TCAGCAGCGCGGCCGCTCCTGCGATAGCCTCAACAACCGATGTGAGGGCTCCTCG
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10 CCCATCAATGGAGGCTGGGGTCCCTGGTGACCATGGGACATCTGTTCTGTACCT
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15 GGAAATGGCATCCAGTGCACAGATGTTGATGAGTGCAAAGAAGTGCCTGATGCC
TGCTTCAACCACAATGGAGAGCACCGGTGTGAGAACACGGACCCCGGCTACAAC
TGCCTGCCCTGCCCCCACGCTTCACCGGCTCACAGCCCTTCGGCCAGGGTGTG
AACATGCCACGGCCAACAACAGGTGTGCAAGCCCCGTAACCCCTGCACGGATG
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20 ACCCATGTACCGCTGCGAGTGCAAGCCTGGCTACGCTGGCAATGGCATCATCTG
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CAGGAAGACTATGACAAGGATGGAATTGGTGATGCCTGTGATGATGACGATGAC
AATGATAAAATTCCAGATGACAGGGACAACGTCCATTCCATTACAACCCAGCTC
25 AGTATGACTATGACAGAGATGATGTGGGAGACCGCTGTGACAACGTCCCTACA
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GTCTACAATGTGGACCAGAGAGACACTGATATGGATGGGGTTGGAGATCAGTGT
GACAATTGCCCTTGGAACACAATCCGGATCAGCTGGACTCTGACTCAGACCGCA
30 TTGGAGATACCTGTGACAACAATCAGGATATTGATGAAGATGGCCACCAGAACA
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35 CGATGACATCTGTCCTGAGAATGTTGACATCAGTGAGACCGATTTCGCGCGATT
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45 TGTATGAAGGGAAGAAAATCATGGCTGACTCAGGACCCATCTATGATAAAACCT
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CCTAGAACGTGCGACCTGCCTCAAGAAAATGCAGTTTTTCAAAAACAGACTCATC
 AGCATTTCAGCCTCCAATGAATAAGACATCTTCCAAGCATATAAAACAATTGCTTTG
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 5 TGCTTTTGTACAGAGCAGGGTGCTATTGTGAGGCCATCTCTGAGCAGTGGACTC
 AAAAGCATTTTCAGGCATGTCAGAGAAGGGGAGGACTCACTAGAATTAGCAAACA
 AAACCACCCTGACATCCTCCTTCAGGAACACGGGGAGCAGAGGCCAAAGCACTA
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 10 TGATGCTGACTGGCGTTAGCTGATTAACCCATGTAAATAGGCACCTTAAATAGAAG
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 CAGTGCTGGCTGCCATTGCCTGGTCACATTGAAATTGGTGGCTTCATTCTAGATG
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 15 ACAAATTATTATCAACCTAACTAAAACATTCTTTTCTCTTTTTTCCGTAATTAC
 TAGGTAGTTTTCTAATTCTCTCTTTTGGAAAGTATGATTTTTTTAAAGTCTTTACGAT
 GTAAAATATTTATTTTTTACTTATTCTGGAAGATCTGGCTGAAGGATTATTCATGG
 AACAGGAAGAAGCGTAAAGACTATCCATGTCATCTTTGTTGAGAGTCTTCGTGAC
 TGTAAGATTGTAAATACAGATTATTTATTAAGTCTGTTCTGCCTGGAAATTTAGGC
 20 TTCATACGGAAAGTGTTTGAGAGCAAGTAGTTGACATTTATCAGCAAATCTCTTG
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 GAGTGGATGTTATGGGATTCTTTTTTCTCTGTTTATCTTTTCAAGTGAATTAG
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 TACTGTTTTACCCCATCCCTTGTGCATATTTCCAGGGAGAAGGAAAGCATATACA
 25 CTTTTTCTTTCAATTTTCCAAAAGAGAAAAAAATGACAAAAGGTGAAACTTACA
 TACAAATATTACCTCATTTGTTGTGTGACTGAGTAAAGAATTTTTGGATCAAGCG
 GAAAGAGTTTAAGTGTCTAACAACTTAAAGCTACTGTAGTACCTAAAAAGTCA
 GTGTTGTACATAGCATAAAAACTCTGCAGAGAAAGTATTTCCAATAAGGAAATAG
 CATTGAAATGTTAAATACAATTTCTGAAAGTTATGTTTTTTTTCTATCATCTGGTA
 30 TACCATTGCTTTATTTTTATAAATTATTTTCTCATTGCCATTGGAATAGAATATTC
 AGATTGTGTAGATATGCTATTTAAATAATTTATCAGGAAATACTGCCTGTAGAGT
 TAGTATTTCTATTTTTATATAATGTTTGCACACTGAATTGAAGAATTGTTGGTTTT
 TTCTTTTTTTGTTTTTTTTTTTTTTTTTTTTTTTTTTTGGCTTTTGACCTCCCATTTT
 CTATTTGCCAATACCTTTTTCTAGGAATGTGCTTTTTTTGTACACATTTTATCCA
 35 TTTTACATTCTAAAGCAGTGTAAGTTGTATATTACTGTTTCTTATGTACAAGGAAC
 AACAATAAATCATATGGAAATTTATATTT

SEQ ID NO: 20

>gi|2229167|gb|AA495846.1|AA495846 zw05a06.r1 Soares_NhHMPu_S1 Homo sapiens

40 cDNA clone IMAGE:768370 5'

TGAACATATTCATTGTTTGTGTTATTAATAAATTACCATTTCAGTTTGAATGAGACCT
 ATATGTCTGGATACTTTAATAGAGCTTTAATTATTACGAAAAAAGATTTACAGAGA
 TAAAACACTAGAAGTTACCTATTCTCCACCTAAATCTCTGAAAAATGGAGAAACC
 CTCTGACTAGTCCATGTCAAATTTTACTAAAAGTCTTTTTGTTTAGATTTATTTTCC
 45 TGCAGCATCTTCTGCAAAATGTACTATATAGTCAGCTTGCTTTGAGGCTAGTAAA
 AAGATATTTTTCTAAACAGATTGGAGTTGGCATATAAACAAATACGTTTTCTCAC
 TAATGACAGTCCATG

SEQ ID NO: 21

>gi|2459627|gb|U88880.1|HSU88880 Homo sapiens Toll-like receptor 4 (TLR4) mRNA,
complete cds

5 ACAGGGCCACTGCTGCTCACAGAAGCAGTGAGGATGATGCCAGGATGATGTCTG
CCTCGCGCCTGGCTGGGACTCTGATCCCAGCCATGGCCTTCCTCTCCTGCGTGAG
ACCAGAAAGCTGGGAGCCCTGCGTGGAGACTTGGCCCTAAACCACACAGAAGAG
CTGGCATGAAACCCAGAGCTTTCAGACTCCGGAGCCTCAGCCCTTCACCCCGATT
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10 TTATCAATGCATGGAGCTGAATTTCTACAAAATCCCCGACAACCTCCCCTTCTCA
ACCAAGAACCTGGACCTGAGCTTTAATCCCCTGAGGCATTTAGGCAGCTATAGCT
TCTTCAGTTTCCCAGAACTGCAGGTGCTGGATTTATCCAGGTGTGAAATCCAGAC
AATTGAAGATGGGGCATATCAGAGCCTAAGCCACCTCTCTACCTTAATATTGACA
GGAAACCCCATCCAGAGTTTAGCCCTGGGAGCCTTTTCTGGACTATCAAGTTTAC
AGAAGCTGGTGGCTGTGGAGACAAATCTAGCATCTCTAGAGAACTTCCCCATTGG
15 ACATCTCAAACTTTGAAAGAACTTAATGTGGCTCACAATCTTATCCAATCTTTC
AAATTACCTGAGTATTTTTCTAATCTGACCAATCTAGAGCACTTGGACCTTTCCAG
CAACAAGATTCAAAGTATTTATTGCACAGACTTGCGGGTTCTACATCAAATGCCC
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20 TTAAATGTAATGAAAACCTTGATTCAAGGTCTGGCTGGTTTAGAAGTCCATCGTT
TGGTTCTGGGAGAATTTAGAAATGAAGGAACTTGGAAAAGTTTGACAAATCTG
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CTACTACCTCGATGATATTATTGACTTATTTAATTGTTTGACAAATGTTTCTTCAT
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25 ATGGCAACATTTAGAATTAGTTAACTGTAAATTTGGACAGTTTCCCACATTGAAA
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30 AACTAGAACATCTGGATTTCCAGCATTCCAATTTGAAACAAATGAGTGAGTTTTC
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35 CATTTAACTCACTCTCCAGTCTTCAGGTACTAAATATGAGCCACAACAACCTTCTTT
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40 GGAATGTGCAACACCTTCAGATAAGCAGGGCATGCCTGTGCTGAGTTTGAATATC
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45 GGGGTGCCTCCATTTAGCTCTGCCTTCACTACAGAGACTTTATTCCCGGTGTGGC
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AAAACCTCCTGAGGCATTTCTTGCCCAGCTGGGTCCAACACTTGTTTCAGTTAATA
5 AGTATTAAATGCTGCCACATGTCAGGCCTTATGCTAAGGGTGAGTAATTCATGG
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AAGGAACCCATGACAAAGAAAGTCATTTCAACTCTTACCTCATCAAGTTGAATAA
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10 ATTGTATTATGTTATAGCCATCATAAAACCATTTTGGTAGTTTTGACTGAACTGGG
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15 ATTTTTATTTTTATATATCCAGTTTTTCATTTTTTACGTCTTGCCTATAAGCTAATA
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20 GACAATTTGGGCTATAGGCATGAAGGAAGTGGGATTACCTCAGGAAGTCACCTT
TTCTTGATTCCAGAAACATATGGGCTGATAAACCCGGGGTGACCTCATGAAATGA
GTTGCAGCAGATGTTTATTTTTTTCAGAACAAAGTGATGTTTGATGGACCTATGAA
TCTATTTAGGGAGACACAGATGGCTGGGATCCCTCCCCTGTACCCTTCTCACTGA
CAGGAGAACTA

25

SEQ ID NO: 22

>gi|189185|gb|M32315.1|HUMNFR Human tumor necrosis factor receptor mRNA, complete cds

GCGAGCGCAGCGGAGCCTGGAGAGAAGGCGCTGGGCTGCGAGGGCGCGAGGGGC
30 GCGAGGGCAGGGGGCAACCGGACCCCGCCCGCACCCATGGCGCCCGTCGCCGTC
TGGGCCGCGCTGGCCGTCGGAAGTCTGGGCTGCGGCGCACGCCTTGCCCG
CCCAGGTGGCATTACACCCTACGCCCCGGAGCCCGGGAGCACATGCCGGCTCA
GAGAATACTATGACCAGACAGCTCAGATGTGCTGCAGCAAATGCTCGCCGGGCC
AACATGCAAAAGTCTTCTGTACCAAGACCTCGGACACCGTGTGTGACTCCTGTGA
35 GGACAGCACATACACCAGCTCTGGAAGTGGGTTCGCGAGTGCTTGAGCTGTGGC
TCCCGCTGTAGCTCTGACCAGGTGGAAGTCAAGCCTGCACTCGGGAACAGAAC
CGCATCTGCACCTGCAGGCCCGGCTGGTACTGCGCGCTGAGCAAGCAGGAGGGG
TGCCGGCTGTGCGCGCCGCTGCGCAAGTGCCGCCCGGGCTTCGGCGTGGCCAGA
CCAGGAAGTGAACATCAGACGTGGTGTGCAAGCCCTGTGCCCCGGGGACGTTC
40 TCCAACACGACTTCATCCACGGATATTTGCAGGCCCCACCAGATCTGTAACGTGG
TGGCCATCCCTGGGAATGCAAGCATGGATGCAGTCTGCACGTCCACGTCCCCAC
CCGGAGTATGGCCCCAGGGGCAGTACACTTACCCAGCCAGTGTCCACACGATC
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CTCCCAATGGGCCCCAGCCCCCAGCTGAAGGGAGCACTGGCGACTTCGCTCTTC
45 CAGTTGGACTGATTGTGGGTGTGACAGCCTTGGGTCTACTAATAATAGGAGTGGT
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GCAGCAGCACCTGCTGATCACAGCGCCGAGCTCCAGCAGCAGCTCCCTGGAGAG
CTCGGCCAGTGCCTTGGACAGAAGGGCGCCCACTCGGAACCAGCCACAGGCACC

AGGCGTGGAGGCCAGTGGGGCCGGGGAGGCCCGGGCCAGCACCGGGAGCTCAG
ATTCTTCCCCTGGTGGCCATGGGACCCAGGTCAATGTCACCTGCATCGTGAACGT
CTGTAGCAGCTCTGACCACAGCTCACAGTGCTCCTCCCAAGCCAGCTCCACAATG
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5 TCCAAGGAGGAATGTGCCTTTCGGTCACAGCTGGAGACGCCAGAGACCCTGCTG
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10 CTCTGACCTGCAGGCCAAGAGCAGAGGCAGCGAGTTGGGGAAAGCCTCTGCTGC
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GGCAAGTCCCTGACTCTCTGTGACCTGCCCCGCCAGCTGCACCTGCCAGCCTGG
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15 GGCTTTCTGGAGAGGAGGGATGCTGCCTGAGTCACCCATGAAGACAGGACAGTG
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20 CATGGTAAAACCCCATCTCTACTAAAAATACAGAAATTAGCCGGGCGTGGTGGC
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25 GGCAGGCCACCATATTCAGTGCTGTGGCCTGGGCAAGATAACGCACTTCTAACTA
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30 CATCTCTCTACTCCTACCTCAGCCTAGACCCTCCTCCTCCCCCAGAGGGGTGGGTT
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CGTGTCTGTGGGTGTGTGTAGCCAAGGTGCGTAAGTTGAATGGCCTGCCTTGAAGC
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35 GGCCCTGCAGAGGGGAAACCAAGTGTAGCCTTGCCCGGATTCTGGGAGGAAGCAG
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40 GCTGCAGTGACGTGCACCTGTACTCAGGAGGCTGAGGGGAGGATCACTGGAGCC
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GGCCAGGTTTCTGCCACATTGGACCCACATGAGGACATGATGGAGCGCACCTG
CCCCCTGGTGGACAGTCTTGGGAGAACCTCAGGCTTCTTGGCATCACAGGGCAG
45 AGCCGGGAAGCGATGAATTTGGAGACTCTGTGGGGCCTTGGTTCCCTTGTGTGTG
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SEQ ID NO: 23

>gi|182627|gb|M34539.1|HUMFKBP Human FK506-binding protein (FKBP) mRNA,
complete cds

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CCCGCTCAGCGTCCGCCGCCGCATGGGAGTGCAGGTGGAAACCATCTCCCCAG
GAGACGGGCGCACCTTCCCCAAGCGCGGCCAGACCTGCGTGGTGCACCTACACCG
GGATGCTTGAAGATGGAAAGAAATTTGATTCTCCCGGGACAGAAACAAGCCCT
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10 CCCAGATGAGTGTGGGTCAGAGAGCCAACTGACTATATCTCCAGATTATGCCTA
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15 TCGTATGTGTGTTTACCTAAACTATATGCCATAAACCTCAAGTTATTCATTTTATT
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20 AGATTTGAGGCGCTGTTGAGGACTGAATTACTCTCCAAGTTGAGAGATGTCTTTG
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25 TCAGGAATTTTGTAACTCTATAACTTTCCAAGCTCCACCACTTCCTAAATCTTAAG
AACTTTAATTGACAGTTTCAATTGAAGGTGCTGTTTGTAGACTTAACACCCAGTG
AAAGCCCAGCCATCATGACAAATCCTTGAATGTTCTCTTAAGAAAATGATGCTGG
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AGTTTCCTGGCTTTTCTCCTCAGCCCCCTTCTACCCCTTTGCTGTCCTGTGTAGT
30 GATTTGGTGAGAAATCGTTGCTGCACCCTTCCCCAGCACCATTATGAGTCTCA
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SEQ ID NO: 24

>gi|1418929|emb|Z74616.1|HSPPA2H100.H.sapiens mRNA for prepro-alpha2(I) collagen

35 AGCACCACGGCAGCAGGAGGTTTCGGNCTAAGTTGGAGGTACTGGNCCACGACT
GCATGCCCCGCGCCCGCCAGGTGATACCTCCGCCGGTGACCCAGGGGCTCTGCGA
CACAAGGAGTCTGCATGTCTAAGTGCTAGACATGCTCAGCTTTGTGGATACGCGG
ACTTTGTTGCTGCTTGCAGTAACCTTATGCCTAGCAACATGCCAATCTTTACAAG
AGGAAACTGTAAGAAAGGGCCCAGCCGGAGATAGAGGACCACGTGGAGAAAGG
40 GGTCCACCAGGCCCCCAGGCAGAGATGGTGAAGATGGTCCCACAGGCCCTCCT
GGTCCACCTGGTCTCCTGGCCCCCCTGGTCTCGGTGGGAACCTTTGCTGCTCAGT
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GAGGCCACCTGGTGCAGCTGGAGCCCCAGGCCCTCAAGGTTTCCAAGGACCTG
CTGGTGAGCCTGGTGAACCTGGTCAAACCTGGTCTGCAGGTGCTCGTGGTCCAGC
45 TGGCCCTCCTGGCAAGGCTGGTGAAGATGGTCACCCTGGAAAACCCGGACGACC
TGGTGAGAGAGGAGTTGTTGGACCACAGGGTGCTCGTGGTTTCCCTGGAACCTCCT
GGACTTCCTGGCTTCAAAGGCATTAGGGGACACAATGGTCTGGATGGATTGAAG
GGACAGCCCGGTGCTCCTGGTGTGAAGGGTGAACCTGGTGGCCCTGGTGAAGAT
GGAACCTCAGGTCAAACAGGAGCCCGTGGGCTTCCTGGTGAAGAGGACGTGTT

GGTGGCCCTGGCCCAGCTGGTGCCCGTGGCAGTGATGGAAGTGTGGGTCCCGTG
GGTCCTGCTGGTCCCATTGGGTCTGCTGGCCCTCCAGGCTTCCCAGGTGCCCTG
GCCCCAAGGGTGAAATTGGAGCTGTTGGTAACGCTGGTCCTGCTGGTCCCGCCGG
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5 AATCCTGGAGCAAACGGCCTTACTGGTGCCAAGGGTGCTGCTGGCCTTCCCGGCG
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10 CCGGCCCTCCAGGACCTCCTGGGCTGAGAGGTAGTCCTGGTTCTCGTGGTCTTCC
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25 GAGGTGAAATTGGTAACCCTGGCAGAGATGGTGCTCGTGGTGCTCATGGTGCTGT
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35 GAAGGGTCCCTCTGGAGAGGCTGGTACTGCTGGACCTCCTGGCACTCCAGGTCT
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40 GTCGCGATGGTCAACCCGGACACAAGGGAGAGCGCGGTTACCCTGGCAATATTG
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 5 AGTATACTGTGATTTCTCTACTGGCGAAACCTGTATCCGGGCCCCAACCTGAAAAC
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 10 CTGGCAACCTGAAAAAGGCTGTCATTCTACAGGGCTCTAATGATGTTGAACTTGT
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 15 AAAAAAGAAAGAAATTTGAAAAAAGTCTTCTTTGCCATTTCTTCTTCTTCTTTT
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 20 CCATAAACATTTGCACCACTTGTGGCTTTTGAATATCTTCCACAGAGGGAAGTTT
 AAAACCCAACTTCCAAAGGTTTAAACTACCTCAAAACACTTTCCCATGAGTGTG
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 TTTGTTTATAATAACAAAGGTGCTAATTAATAGTATTTTCAGATACTTGAAGAATGT
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 25 GGTGTATTTTTTAAAAAATTTGATTTAGCATTTCATATTTTCCATCTTATTCCCAATT
 AAAAGTATGCAGATTATTTGCCCAAAGTTGTCCTCTTCTTCAGATTTCAGCATTGT
 TCTTTGCCAGTCTCATTTTCATCTTCTTCCATGGTTCCACAGAAGCTTTGTTTCTTG
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30

SEQ ID NO: 25

>gi|181179|gb|M11233.1|HUMCTHD Human cathepsin D mRNA, complete cds

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 35 CTCGTCAGGATCCCGCTGCACAAGTTCACGTCCATCCGCGGACCATGTGCGAGG
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 GGCGGTGCCAGCCGTGACCGAGGGGCCATTCCCGAGGTGCTCAAGAACTACAT
 GGACGCCCAGTACTACGGGGAGATTGGCATCGGGACGCCCCCCCAGTGCTTCAC
 AGTCGTCTTCGACACGGGCTCCTCCAACCTGTGGGTCCCCTCCATCCACTGCAAA
 40 CTGCTGGACATCGCTTGCTGGATCCACCACAAGTACAACAGCGACAAGTCCAGC
 ACCTACGTGAAGAATGGTACCTCGTTTGACATCCACTATGGCTCGGGCAGCCTCT
 CCGGGTACCTGAGCCAGGACACTGTGTGGTGGCCTGCCAGTCAGCGTCGTCAGC
 CTCTGCCCTGGGCGGTGTCAAAGTGGAGAGGCAGGTCTTTGGGGAGGCCACCAA
 GCAGCCAGGCATCACCTTCATCGCAGCCAAGTTCGATGGCATCCTGGGCATGGCC
 45 TACCCCCGCATCTCCGTCAACAACGTGCTGCCCGTCTTCGACAACCTGATGCAGC
 AGAAGCTGGTGGACCAGAACATCTTCTCTTCTACCTGAGCAGGGACCCAGATGC
 GCAGCCTGGGGGTGAGCTGATGCTGGGTGGCACAGACTCCAAGTATTACAAGGG
 TTCTCTGTCTACCTGAATGTCACCCGCAAGGCCTACTGGCAGGTCCACCTGGAC
 CAGGTGGAGGTGGCCAGCGGGCTGACCCTGTGCAAGGAGGGCTGTGAGGCCATT

GTGGACACAGGCACTTCCCTCATGGTGGGCCCCGGTGGATGAGGTGCGCGAGCTG
CAGAAAGGCCATCGGGGCGGTGCCGCTGATTACAGGGCGAGTACATGATCCCCTGT
GAGAAGGTGTCCACCTGCCCCGCGATCACACTGAAGCTGGGAGGCAAAGGCTAC
AAGCTGTCCCCAGAGGACTACACGCTCAAGGTGTGCGAGGCCGGGAAGACCCTC
5 TGCCTGAGCGGGCTTCATGGGCATGGACATCCCGCCACCCAGCGGGGCACTCTGGA
TCCTGGGCGACGTCTTCATCGGCCGCTACTACACTGTGTTTGACCGTGACAACAA
CAGGGTGGGCTTCGCCGAGGCTGCCCCGCTCTAGTTCCCAAGGCGTCCGCGCGCC
AGCACAGAAACAGAGGAGAGTCCAGAGCAGGAGGCCCTGGCCCAGCGGCC
CTCCCACACACACCCACACACTCGCCCCGCCACTGTCTGGGCGCCCTGGAAGCC
10 GGCGGCCCAAGCCCGACTTGCTGTTTTGTTCTGTGGTTTTCCCCTCCCTGGGTTCA
GAAATGCTGCCTGCCTGTCTGTCTCTCCATCTGTTTGGTGGGGGTAGAGCTGATC
CAGAGCACAGATCTGTTTCGTGCATTGGAAGACCCACCCAAGCTTGGCAGCCG
AGCTCGTGTATCCTGGGGCTCCCTTCATCTCCAGGGAGTCCCTCCCCGGCCCTA
CCAGCGCCCGCTGGGCTGAGCCCCTACCCACACCAAGGCCGTCTCCCCGGGCCCT
15 CCCTTGAAACCTGCCCTGCCTGAGGGGCCCTCTGCCAGCTTGGGCCAGCTGG
GCTCTGCCACCCTACCTGTTCAAGTGTCCCGGGCCCGTTGAGGATGAGGCCGCTAG
AGGCCTGAGGATGAGCTGGAAGGAGTGAGAGGGGACAAAACCCACCTTGTGGA
GCCTGCAGGGTGGTGTGGGACTGAGCCAGTCCCAGGGGCATGTATTGGCCTGG
AGGTGGGGTTGGGATTGGGGGCTGGTGCCAGCCTTCCTCTGCAGCTGACCTCTGT
20 TGTCTCCCCTTGGGCGGCTGAGAGCCCCAGCTGACATGGAAATACAGTTGTTGG
CCTCCGGCCTCCCCTC

SEQ ID NO: 26

>gi|2167381|gb|AA453712.1|AA453712 aa20f04.r1 Soares_NhHMPu_S1 Homo sapiens
cDNA clone IMAGE:813823 5'
25 GCCATTATCCTACTCCAAGATCAAGCATTTGCGTTGTGGATGGCAATCGCATCTC
AGAAACCAGTCTTCCACCGGATATGTATGAATGTCTACGTGTTGCTAACGAAGTC
ACTCTTAATTAATATCTGTATCCTGGAACAATATTTTATGGTTATGTTTTCTGTG
TGTCAGTTTTCATAGTATCCATATTTTATTACTGTTTATTACTTCCATGAATTTTAA
30 AATCTGAGGGAAATGTTTTGTAAACATTTATTTTTTTTAAAGAAAAGATGAAAGG
CAGGCCTATTTATCACAAGAACACACATATACACGAATAGACATCAAATCTC
AATGCTTTATTTGTAAATTTAGTGTTTTTTTATTTCTACTGTCAAATGATGTGCAA
AACCTTTTACTGGTTGCATGGAAATCAGCCAAGTTTTATAATCCTTAAATCTTAAT
GTTCTCAAAGCTTGGATTTAATACATATGGATGTACTCTCTTGCACCAAATTAT
35 CTTGATACATTCAAATTTGTCTGGTTAAAAAATAGGTGGTAGATATTGAGGCCAA
GA

SEQ ID NO: 27

>gi|339730|gb|M75165.1|HUMTM1E H.sapiens epithelial tropomyosin (TM1) mRNA,
complete cds
40 CGCCTGCCACCGGTGCACCCAGTCCGCTCACCCAGCCCAGTCCGTCCGGTCTCTCA
CCGCCTGCCGGCCGGGCCACCCCCACCGCAGCCATGGACGCCATCAAGAAGAA
GATGCAGATGCTGAAGCTGGACAAGGAGAACGCCATCGACCGCGCCGAGCAGGC
CGAAGCCGACAAGAAGCAAGCTGAGGACCGCTGCAAGCAGCTGGAGGAGGAGC
45 AGCAGGCCCTCCAGAAGAAGCTGAAGGGGACAGAGGATGAGGTGGAAAAGTAT
TCTGAATCCGTGAAGGAGGCCAGGAGAACTGGAGCAGGCCGAGAAGAAGGC
CACTGATGCTGAGGCAGATGTGGCCTCCCTGAACCGCCGCATTCAGCTGGTTGAG
GAGGAGCTGGACCGGGCCAGGAGCGCCTGGCTACAGCCCTGCAGAAGCTGGAG
GAGGCCGAGAAGGCGGCTGATGAGAGCGAGAGAGGAATGAAGGTCATCGAAAA

CCGGGCCATGAAGGATGAGGAGAAGATGGAAGTGCAGGAGATGCAGCTGAAGG
AGGCCAAGCACATCGCTGAGGATTCAGACCGCAAATATGAAGAGGTGGCCAGGA
AGCTGGTGATCCTGGAAGGAGAGCTGGAGCGCTCGGAGGAGAGGGCTGAGGTG
GCCGAGAGCCGAGCCAGACAGCTGGAGGAGGAAGTTCGAACCATGGACCAGGC
5 CCTCAAGTCCCTGATGGCCTCAGAGGAGGAGTATTCCACCAAAGAAGATAAATA
TGAAGAGGAGATCAAAGTGTGGAGGAGAAGCTGAAGGAGGCTGAGACCCGAG
CAGAGTTTGGCGAGAGGTCTGTGGCAAAGTTGGAGAAAACCATCGATGACCTAG
AAGAGACCTTGGCCAGTGCCAAGGAGGAGAACGTCGAGATTCACCAGACCTTGG
ACCAGACCCTGCTGGAAGTCAACAACCTGTGAGGGGCCAGCCCCACCCCCAGCCA
10 GGCTATGGTTGCCACCCCAACCCAATAAACTGATGTTACTAGCC

SEQ ID NO: 28

>gi|189731|gb|J03278.1|HUMPDGFRA Human platelet-derived growth factor (PDGF)
receptor mRNA, complete cds

15 GGCCCCCTCAGCCCTGCTGCCCAGCACGAGCCTGTGCTCGCCCTGCCCAACGCAGA
CAGCCAGACCCAGGGCGGCCCTCTGGCGGCTCTGCTCCTCCCGAAGGATGCTTG
GGGAGTGAGGCGAAGCTGGGCGCTCCTCTCCCCTACAGCAGCCCCCTTCCTCCAT
CCCTCTGTTCTCCTGAGCCTTCAGGAGCCTGCACCAGTCCTGCCTGTCCTTCTACT
CAGCTGTTACCCACTCTGGGACCAGCAGTCTTTCTGATAACTGGGAGAGGGCAGT
20 AAGGAGGACTTCCTGGAGGGGGTGACTGTCCAGAGCCTGGAAGTGTGCCACAC
CAGAAGCCATCAGCAGCAAGGACACCATGCGGCTTCCGGGTGCGATGCCAGCTC
TGGCCCTCAAAGGCGAGCTGCTGTTGCTGTCTCTCCTGTTACTTCTGGAACCACA
GATCTCTCAGGGCCTGGTCGTCACACCCCGGGGCCAGAGCTTGTCTCAATGTC
TCCAGCACCTTCGTTCTGACCTGCTCGGGTTCAGCTCCGGTGGTGTGGGAACGGA
25 TGTCCAGGAGCCCCACAGGAAATGGCCAAGGCCAGGATGGCACCTTCTCCA
GCGTGCTCACACTGACCAACCTCACTGGGCTAGACACGGGAGAATACTTTGCAC
CCACAATGACTCCCGTGGACTGGAGACCGATGAGCGGAAACGGCTCTACATCTTT
GTGCCAGATCCCACCGTGGGCTTCTCCTAATGATGCCGAGGAAGTATTCATCT
TTCTCACGGAAATAACTGAGATCACCATTCCATGCCGAGTAACAGACCCACAGCT
30 GGTGGTGACACTGCACGAGAAGAAAGGGGACGTTGCACTGCCTGTCCCCTATGA
TCACCAACGTGGCTTTTCTGGTATCTTTGAGGACAGAAGCTACATCTGCAAAACC
ACCATTGGGGACAGGGAGGTGGATTCTGATGCCTACTATGTCTACAGACTCCAGG
TGTCATCCATCAACGTCTCTGTGAACGCAGTGCAGACTGTGGTCCGCCAGGGTGA
GAACATCACCCCTCATGTGCATTGTGATCGGGAATGAGGTGGTCAACTTCGAGTGG
35 ACATAACCCCGCAAAGAAAGTGGGCGGCTGGTGGAGCCGGTGAAGTACTTCTC
TTGGATATGCCTTACCACATCCGCTCCATCCTGCACATCCCCAGTGCCGAGTTAG
AAGACTCGGGGACCTACACCTGCAATGTGACGGAGAGTGTGAATGACCATCAGG
ATGAAAAGGCCATCAACATCACCGTGGTTGAGAGCGGCTACGTGCGGCTCCTGG
GAGAGGTGGGCACACTACAATTTGCTGAGCTGCATCGGAGCCGGACACTGCAGG
40 TAGTGTTGAGGCTACCCACCGCCCACTGTCTGTGGTTCAAAGACAACCGCAC
CCTGGGCGACTCCAGCGCTGGCGAAATCGCCCTGTCCACGCGCAACGTGTGCGGA
GACCCGGTATGTGTGACAGCTGACACTGGTTCGCGTGAAGGTGGCAGAGGCTGG
CCACTACACCATGCGGGCCTTCCATGAGGATGCTGAGGTCCAGCTCTCCTTCCAG
CTACAGATCAATGTCCCTGTCCGAGTGTGGAGCTAAGTGAGAGCCACCCTGACA
45 GTGGGGAACAGACAGTCCGCTGTGCTGGCCGGGGCATGCCCCAGCCGAACATCA
TCTGGTCTGCCTGCAGAGACCTCAAAGGTGTCCACGTGAGCTGCCGCCACGCT
GCTGGGGAACAGTTCGAAGAGGAGAGCCAGCTGGAGACTAACGTGACGTAAGT
GGAGGAGGAGCAGGAGTTTGAGGTGGTGAACACTGCGTCTGCAGCACGTGGA
TCGGCCACTGTCGGTTCGCTGCACGCTGCGCAACGCTGTGGGCCAGGACACGCA

CTCTCTGGGCCTCAGTTTCCCCTTCAAAAAATGAATAAGTCGGACTTATTAACCTCT
GAGTGCCTTGCCAGCACTAACATTCTAGAGTATTCCAGGTGGTTGCACATTTGTC
CAGATGAAGCAAGGCCATATAACCCTAAACTTCCATCCTGGGGGTCAGCTGGGCTC
CTGGGAGATTCCAGATCACACATCACACTCTGGGGACTCAGGAACCATGCCCCCTT
5 CCCCAGGCCCCCAGCAAGTCTCAAGAACACAGCTGCACAGGCCTTGACTTAGAG
TGACAGCCGGTGTCTTGAAAGCCCCAAGCAGCTGCCCCAGGGACATGGGAAGA
CCACGGGACCTCTTTCACTACCCACGATGACCTCCGGGGGTATCCTGGGCAAAAG
GGACAAAGAGGGCAAATGAGATCACCTCCTGCAGCCCACCACTCCAGCACCTGT
GCCGAGGTCTGCGTCGAAGACAGAATGGACAGTGAGGACAGTTATGTCTTGTA
10 AAGACAAGAAGCTTCAGATGGTACCCCAAGAAGGATGTGAGAGGTGGCCGCTTG
GAGTTTGCCCCCTCACCCACCAGCTGCCCCATCCCTGAGGCAGCGCTCCATGGGGG
TATGGTTTTGTCACTGCCCAGACCTAGCAGTGACATCTCATTGTCCCCAGCCCAG
TGGGCATTGGAGGTGCCAGGGGAGTCAGGGTTGTAGCCAAGACGCCCCCGCACG
GGGAGGGTTGGGAAGGGGGTGCAGGAAGCTCAACCCCTCTGGGCACCAACCCTG
15 CATTGCAGGTTGGCACCTTACTTCCCTGGGATCCCCAGAGTTGGTCCAAGGAGGG
AGAGTGGGTTCTCAATACGGTACCAAAGATATAATCACCTAGGTTTACAAATATT
TTTAGGACTCACGTAACTCACATTTATACAGCAGAAATGCTATTTTGTATGCTGT
TAAGTTTTTCTATCTGTGTACTTTTTTTTAAGGGAAAGATTTT

20 SEQ ID NO: 29

>2210910T6

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AGAAGTTGAGAGCCTCAAAAGGGGCCTCATGAAGCCCAGATCTTCCCTGGTCAA
25 GCTGATGGCATTTCGTATAACTGAAAGTTGGGGAAGACCACCAGGTCAGTGGAGT
GGAGAGGTTTTGTATATGGTCTTCTTTGAAGAACTTACTTCTTGCAAGCCCTGG
CATCTTCCAATTGGCTGTCTAGTAGTGACGTGGCATCAGCCTACCAGCAATGG
NGGTCTACTCACCTTCACTGNGTTTTGTCCCTGAAGTCAGAAGCCCTGGCACAG
CCAAGTTCACAGGCCAAATCACACTTCAGGCCACACTGCTTCACGCAATGACAC
30 ACGTACAGACGGATATACAGAAACACTTCTCNAGGAGTGCATGAGCATGGTTCA
TTTCATATTTTCNTTCNATCCAGTCTTTAAAANGCAGCACCTTGGTGAAAGCAGTG
GAG

SEQ ID NO: 30

35 >gi|1888315|gb|U09278.1|HSU09278 Human fibroblast activation protein mRNA, complete
cds

AAGAACGCCCCCAAATCTGTTTCTAATTTTACAGAAATCTTTTGAAACTTGGCA
CGGTATTCAAAAGTCCGTGGAAAGAAAAAACCTTGTCTGGCTTCAGCTTCCAA
CTACAAAGACAGACTTGGTCTTTTTCAACGGTTTTTCACAGATCCAGTGACCCACG
40 CTCTGAAGACAGAATTAGCTAACTTTCAAAAACATCTGGAAAAATGAAGACTTG
GGTAAAAATCGTATTTGGAGTTGCCACCTCTGCTGTGCTTGCCTTATTGGTGATGT
GCATTGTCTTACGCCCTTCAAGAGTTCATAACTCTGAAGAAAATACAATGAGAGC
ACTCACACTGAAGGATATTTTAAATGGAACATTTTCTTATAAAACATTTTTTCCAA
ACTGGATTTTCAAGACAAGAATATCTTCATCAATCTGCAGATAACAATATAGTACT
45 TTATAATATTGAAACAGGACAATCATATACCATTTTGAGTAATAGAACCATGAAA
AGTGTGAATGCTTCAAATTACGGCTTATCACCTGATCGGCAATTTGTATATCTAG
AAAGTGATTATTCAAAGCTTTGGAGATACTCTTACACAGCAACATATTACATCTA
TGACCTTAGCAATGGAGAATTTGTAAGAGGAAATGAGCTTCCTCGTCCAATTTCAG
TATTTATGCTGGTCGCCTGTTGGGAGTAAATTAGCATATGTCTATCAAAACAATA

TCTATTTGAAACAAAGACCAGGAGATCCACCTTTTCAAATAACATTTAATGGAAG
AGAAAATAAAATATTTAATGGAATCCCAGACTGGGTTTATGAAGAGGAAATGCT
TCCTACAAAATATGCTCTCTGGTGGTCTCCTAATGGAAAATTTTGGCATATGCG
GAATTTAATGATAAGGATATAACCAGTTATTGCCTATTCCTATTATGGCGATGAAC
5 AATATCCTAGAACAAATAAAATATTCCATACCCAAAGGCTGGAGCTAAGAATCCCG
TTGTTCCGATATTTATTATCGATACCACTTACCCTGCGTATGTAGGTCCCCAGGAA
GTGCTGTTCAGCAATGATAGCCTCAAGTGATTATTATTTAGTTGGCTCACGT
GGGTTACTGATGAACGAGTATGTTTGCAGTGGCTAAAAAGAGTCCAGAATGTTTC
GGTCTGTCTATATGTGACTTCAGGGAAGACTGGCAGACATGGGATTGTCCAAAG
10 ACCCAGGAGCATATAGAAGAAAGCAGAACTGGATGGGCTGGTGGATTCTTTGTT
TCAAGACCAGTTTTCAGCTATGATGCCATTTTCGTACTACAAAATATTTAGTGACA
AGGATGGCTACAAACATATTCAGTATATCAAAGACACTGTGGAAAATGCTATTCA
AATTACAAGTGGCAAGTGGGAGGCCATAAATATATTCAGAGTAACACAGGATTC
ACTGTTTTATTCTAGCAATGAATTTGAAGAATACCCTGGAAGAAGAAACATCTAC
15 AGAATTAGCATTGGAAGCTATCCTCCAAGCAAGAAGTGTGTTACTTGCCATCTAA
GGAAAGAAAGGTGCCAATATTACACAGCAAGTTTCAGCGACTACGCCAAGTACT
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CACTGATCAAGAAATTAATAATCCTGGAAGAAAACAAGGAATTGGAAAATGCTTT
GAAAAATATCCAGCTGCCTAAAGAGGAAATTAAGAACTTGAAGTAGATGAAAT
20 TACTTTATGGTACAAGATGATTCTTCTCCTCAATTTGACAGATCAAAGAAGTAT
CCCTTGCTAATTCAAGTGTATGGTGGTCCCTGCAGTCAGAGTGTAAGGTCTGTAT
TTGCTGTAAATTGGATATCTTATCTTGCAAGTAAGGAAGGGATGGTCATTGCCTT
GGTGGATGGTCGAGGAACAGCTTTCCAAGGTGACAACTCCTCTATGCAGTGTAT
CGAAAGCTGGGTGTTTATGAAGTTGAAGACCAGATTACAGCTGTCAGAAAATTC
25 ATAGAAATGGGTTTCATTGATGAAAAAAGAATAGCCATATGGGGCTGGTCTAT
GGAGGATACGTTTCATCACTGGCCCTTGCACTCTGGAAGTGGTCTTTTCAAATGTG
GTATAGCAGTGGCTCCAGTCTCCAGCTGGGAATATTACGCGTCTGTCTACACAGA
GAGATTCATGGGTCTCCCAACAAAGGATGATAATCTTGAGCACTATAAGAATTCA
ACTGTGATGGCAAGAGCAGAAATATTTAGAAATGTAGACTATCTTCTCATCCACG
30 GAACAGCAGATGATAATGTGCACTTTCAAAGTCTCAGCACAGATTGCTAAAGCTCT
GGTTAATGCACAAGTGGATTTCCAGGCAATGTGGTACTCTGACCAGAACCACGG
CTTATCCGGCCTGTCCACGAACCACTTATACACCCACATGACCCACTTCCTAAAG
CAGTGTCTCTCTTTGTCAGACTAAAAACGATGCAGATGCAAGCCTGTATCAGAAT
CTGAAAACCTTATATAAAACCCCTCAGACAGTTTGCTTATTTTATTTTATGTTGT
35 AAAATGCTAGTATAAAACAAACAAATTAATGTTGTTCTAAAGGCTGTTAAAAAAA
AGATGAGGACTCAGAAGTTCAAGCTAAATATTGTTTACATTTTCTGGTACTCTGT
GAAAGAAGAGAAAAGGGAGTCATGCATTTTGCTTTGGACACAGTGTTTTATCACC
TGTTCAATTTGAAGAAAAATAATAAAGTCAGAAGTTCAAAAAAAAAAAAAAAAAAA
AAAAAAGCGGCCGCTCG

40

SEQ ID NO: 31

>gi|1874639|gb|AA243828.1|AA243828 zr67a10.r1 Soares_NhMPu_S1 Homo sapiens
cDNA clone IMAGE:668442 5' similar to TR:G433338 G433338 PROTEIN-TYROSINE
KINASE PRECURSOR ;

45

AATTTTGTTCACCGAGATCTGGCCACACGAAACTGTTTAGTGGGTAAGAACTACA
CAATCAAGATAGCTGACTTTGGAATGAGCAGGAACCTGTACAGTGGTGACTATT
ACCGGATCCAGGGCCGGGAGTGTCTCCCTATCCGCTGGATGTCTTGGGAGAGTAT
CTTGCTGGGCAAGTTCACTACAGCAAGTGATGTGTGGGCCTTTGGGGTACTTTG
TGGGAGACTTTCACCTTTTGTCAAGAACAGCCCTATCCAGCTGTCAGATGAAC

AGGTTATTGAGAATACTGGAGAGTTCTTCCGAGACCAAGGGAGGCAGACTTACC
TCCCTCAACCAGCCATTTGTCCTGACTCTGTGTATAAGCTGATGCTCAGCTGCTGG
AGAAGAGATACGAAGAACCGTCCCTCATTTCCAAGAAATCCACCTTCTGCTCCTTC
AACAAGGCGACGAGTGATGCTGTCACTGCCTGGCCATGTTCTACGGCTCAGGTC
5 CTCCCTACAAGACCTACCACTCACCCATGCCTATGCCACTCCATCTGGACATTTA
ATGAAACTGAGAGACAGAGGCTTGTTTGCTTG

SEQ ID NO: 32

>gi|2189450|gb|AA464566.1|AA464566 zx85d12.s1 Soares ovary tumor NbHOT Homo
10 sapiens cDNA clone IMAGE:810551 3' similar to TR:G49942 G49942 AM2 RECEPTOR. ;
TTTTTTTTTTTTTTTTTTTTTCTCGCTCACATATAAAATGTAATTCCTTCATTTTTTAC
ATTTATACATCCGGCGGGGCCAGGGAAGGGCTGGCTGGGGAGGGGGCTCACTGAA
GGACTTCACCGGCAGGTGCAGGAGGCTTTCTGGGGGCAGTCCGACGGGGCAGGG
CTCATGCCAAGGGGTCCCCTATCTCGTCCTCAGGGCCCCGGCACGGAGTTTCTCG
15 CTTCTCGTCCGTGCTGGCCAGGGAGTGGGTACTGCATGGCCCCCATGTAGAGTG
TGGCATAACCGGGTTGGTGAAGTTGGTGGGCTTGTGAGGGTCCAGGGCAAAGT
CAGCGTCCAGTAGGCCTCCACATCATCAGGCTCTCCGCCTTCGTACATCTTGTA
GGTGGGGTTTCCAATCTCCACGTTTCATGGCCCCGTTGGTCATCCGTTGGTGCTGG
AACCCTTGAGCCCCTTGAGCTCGCCGCTTATACCAGAATACCACTCCGGCCACCA
20 GAACCCAGCAGCAGAGCAACAGCAGAGGGATTAAGAATGGAGGCCATATGTCCC
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SEQ ID NO: 33

>3415853H1
25 CGACTCCTGCCCCGGCCCTACCCCGAGCTGATCTCCCGTCCCTCGCCCCCGACCAT
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ACTCAGGTACAGAGACTGATGAGTGCCGACTGAACCAGAACATCTGTGGCCAC
GGAGAGTGCGTGCCGGGGCCCCCTGACTACTCCTGCCACTGCAACCCCGGCTACC
GGTCACATCCCCAGCACCGCTACTGCGTGGATGTGAAC
30

SEQ ID NO: 34

>gi|2432798|gb|AA599173.1|AA599173 ae46c05.s1 Stratagene lung carcinoma 937218
Homo sapiens cDNA clone IMAGE:949928 3'
TTTTTTACCTATCCCTGGAGCAAGTAATAGGAAGAGAATGGGCAAACCTGGTTGCA
35 CGAGAGAAAAGAGAATGGAGTTGGGAGCAACACATGAACTTGCGTTATAACATT
CTGCTGTCCAGATCTGCCCTACTGTGCTGGTGGTCGGTCTGTCCCTCTTCTCATT
GCCACTCACAGGAGAGGTGCTTGTGCACTCTGATTCACAGGGGATGAACTCAGG
ATCTCAAAAAGACATACAAAACTAGAGGTATGTATCACTTAAATAGCTACGAAA
CTCACACCGTGATCTCCCTTCTGACACACATCTGCGCCATCTCTTCCAACATAAA
40 ATAAACTGTTTCAATGGTTTGTGTCAGTTATTTTCAAATCACTAAAATGTACAGTCA
TCCACCAACAATTTAAGAAAGAACCTAAGAGGCAAATCACTGGGGAC

SEQ ID NO: 35

>gi|3171909|emb|AJ001014.1|HSRAMP1 Homo sapiens mRNA encoding RAMP1
45 CGAGCGGACTCGACTCGGCACCGCTGTGCACCATGGCCCCGGGCCCTGTGCCGCCT
CCCGCGGCGCGGCCTCTGGCTGCTCCTGGCCCATCACCTCTTCATGACCACTGCC
TGCCAGGAGGCTAACTACGGTGCCCTCCTCCGGGAGCTCTGCCTACCCAGTTCC
AGGTAGACATGGAGGCCGTGCGGGAGACGCTGTGGTGTGACTGGGGCAGGACCA
TCAGGAGCTACAGGGAGCTGGCCGACTGCACCTGGCACATGGCGGAGAAGCTGG

GCTGCTTCTGGCCCAATGCAGAGGTGGACAGGTTCTTCTGGCAGTGCATGGCCG
CTACTTCAGGAGCTGCCCCATCTCAGGCAGGGCCGTGCGGGACCCGCCGGCAG
CATCCTCTACCCCTTCATCGTGGTCCCCATCACGGTGACCCTGCTGGTGACGGCA
CTGGTGGTCTGGCAGAGCAAGCGCACTGAGGGCATTGTGTAGGCGGGGCCAGG
5 CTGCCCCGCGGGTGCACCCAGGCTGCAGGGTGAGGCCAGGCAGGCCTGGGTAGGG
GCAGCTTCTGGAGCCTTGGGACAGAGCAGGCCACAATGCCCCCTTCTTCCAGC
CAAGAAGAGCTCACAGGAGTCCAGAGTAGCCGAGGCTCTGGTATTAACCTGGAA
GCCCCCTGGCTGGAGGCCACCGCCACCCTAGGAAGGGGGCAGGGACGTGACCT
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10 GTGGATGAGTGGTTTGTGATTAAAAGGGATGTTCTTG

SEQ ID NO: 36

>gi|1627385|gb|AA085318.1|AA085318 zn12f12.r1 Stratagene hNT neuron (#937233)

Homo sapiens cDNA clone IMAGE:547247 5'

15 ACATTCTGCAATGGCAGCATTCCCACCAACAAAATCCATGTGACCATTCTGCCTC
TCCTCAGGAGAAAGTACCCTCTTTTACCAACTTCCTCTGCCATGTTTTCCCTGC
TCCCCTGAGACCACCCCCAAACACAAAACATTCATGTAACCTCTCCAGCCATTGTA
ATTTGAAGATGTGGATCCCTTTAGAACGGTTGCCCCAGTAGAGTTAGCTGATAAG
GGAACTTTATTTAAATGNATGTCTTAAAT

20

SEQ ID NO: 37

>gi|2156363|gb|AA443688.1|AA443688 zw86d05.s1 Soares_total_fetus_Nb2HF8_9w Homo
sapiens cDNA clone IMAGE:783849 3'

25 TTTTCAAAGTTACAATAGTTTAATAATTTAAATAGGACCAACTTCAGGAACATAC
ATACTCATACATAAAAATTAAACAATTTAATTTTGAACAGTGTATTGAAATACATC
AAATTCTTAAAAATCCCCCAAATGGACTCAAGATCATGGATATGAAAAGGTAAT
TTTGAAGTACTAAAGACTAGAGTAAAACAGACAAAGTCATTACTTTGCATTTACT
AATAAGACAACAGCCTGTGGATACATTAGACCTTTATAAGAACACTTCTAGGAA
ATGTTAGAACAAACGAGTCATTAAAAAGGAATATAAATGAGTTCATAAAGATAAA
30 TGTATAGCTGACAATTTCTTTGGTCCTCGAAGTCACACTTGTTTTACTTTAAAT
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SEQ ID NO: 38

>29 BLOOD 441249.1 AF086432 g3483777 Human full length insert cDNA clone

35 ZD79H11.0

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ATCCACTTCCCTGCCGACCTTAGTTTCAAAGCTTATTCTTAATTAGAGACAAGAA
ACCTGTTTCAACTTGAAGACACCGTATGAGGTGAATGGACAGCCAGCCACCACA
40 ATGAAAGAAATCAAACCAGGAATAACCTATGCTGAACCCACGCCTCAATCGTCC
CCAAGTGTTTCCTGACACGCATCTTTGCTTACAGTGCATCACAACTGAAGAATGG
GGTTCAACTTGACGCTTGCAAAATTACCAAATAACGAGCTGCACGGCCAAGAGA
GTCACAATTTCAGGCAACAGGAGCGACGGGCCAGGAAAGAACACCACCCTTCACA
ATGAATTTGACACAATTGTCTTGCCAGTGCTTTATCTCATTATATTTGTGGCAAGC
45 ATCTTGCTGAATGGTTTAGCAGTGTGGATCTTCTTCCACATTAGGAATAAAACCA
GCTTCATATTCTATCTCAAAAACATAGTGGTTGCAGACCTCATAATGACGCTGAC
ATTTCCATTTCGAATAGTCCATGATGCAGGATTTGGACCTTGGTACTTCAAGTTTA
TTCTCTGCAGATACACTTCAGTTTTGTTTTATGCAAACATGTATACTTCCATCGTG
TTCCTTGGGCTGATAAGCATTGATCGCTATCTGAAGGTGGTCAAGCCATTTGGGG

ACTCTCGGATGTACAGCATAACCTTCACGAAGGTTTTATCTGTTTGTGTTTGGGTG
 ATCATGGCTGTTTTGTCTTTGCCAAACATCATCCTGACAAATGGTCAGCCAAACAG
 AGGACAATATCCATGACTGCTCAAAACTTAAAAGTCCTTTGGGGGTCAAATGGC
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 5 GATCGGATGTTACATAGCCATATCCAGGTACATCCACAAATCCAGCAGGCAATTC
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 GCTGTGTTTTTTACCTGCTTTCTACCATATCACTTGTGCAGAATTCCTTTTACTTTT
 AGTCACTTAGACAGGCTTTTAGATGAATCTGCACAAAAAATCCTATATTACTGCA
 AAGAAATTACACTTTTCTTGTCTGCGTGTAATGTTTGCCTGGATCCAATAATTTAC
 10 TTTTTCATGTGTAGGTCATTTTCAAGAAGGCTGTTCAAAAAATCAAATATCAGAA
 CCAGGAGTGAAAGCATCAGATCACTGCAAAGTGTGAGAAGATCGGAAGTTCGCA
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15 SEQ ID NO: 39

>2601724H1

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 20 AGGTGAGATAGAGAGCCAGCCAGCAGCTTCCATGTCCTGAGGAGCCTGCCCT
 CAGCAGCAAGGGTTCGGGCTCTGCAGGCTGGGACGTCATTCAGATGACACCACA
 GGAGATTGCCGTGA

SEQ ID NO: 40

25 >3248833H1

GGCGAGCGGACTCGACTCGGCACCGCTGTGCACCATGGCCCGGGCCCTGTGCCG
 CCTCCCGCGGCGGGCCTCTGGCTGCTCCTGGCCCATCACCTCTTCATGACCACTG
 CCTGCCAGGAGGCTAACTACGGTGCCCTCCTCCGGGAGCTCTGCCTCACCCAGTT
 CCAGGTAGACATGGAGGCCGTGCGGGGAGACGCTGTGGTGTGACTGGGGCAGGAC
 30 CATCAGGAGCTACAGGGAGCTGGCCGACTGCACCTGGCACATGGCGGAGAAGCT
 GGGCTGCTTCTGGCCCAATGCAGAGGTGGACAGGTTCTTCCTGGCA

SEQ ID NO: 41

>gi|2253586|gb|U37791.1|HSU37791 Homo sapiens clone rasi-1 matrix metalloproteinase

35 RASI-1 mRNA, complete cds

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 CCTCTGGAGCTCTCGTCTGGTGGGACCATGAACTGCCAGCAGCTGTGGCTGGGCT
 TCCTACTCCCATGACAGTCTCAGGCCGGGTCTGGGGCTTGACAGAGGTGGCGCC
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 40 AACTTCAAGCCAGAAGATATCACCGAGGCTCTGAGAGCTTTTCAGGAAGCATCT
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 CCTCCACCCACACAGCCCGGGCAGCCCTGCGTCAAGCCTTCCAGGACTGGAGC
 45 AATGTGGCTCCCTTGACCTTCCAAGAGGTGCAGGCTGGTGGGCTGACATCCGCC
 TCTCCTTCCATGGCCGCCAAAGCTCGTACTGTTCCAATACTTTTGATGGGCCTGGG
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 GACGAGTTCTGGACTGAGGGGACCTACCGTGGGGTGAACCTGCGCATCATTGCA
 GCCCATGAAGTGGGCCATGCTCTGGGGCTTGGGCACTCCCGATATTCCCAGGCC

TCATGGCCCCAGTCTACGAGGGCTACCGGCCCCACTTTAAGCTGCACCCAGATGA
TGTGGCAGGGATCCAGGCTCTCTATGGCAAGAAGAGTCCAGTGATAAGGGATGA
GGAAGAAGAAGAGACAGAGCTGCCCACTGTGCCCCAGTGCCACAGAACCCAG
TCCCATGCCAGACCCTTGCAGTAGTGAAGTGGATGCCATGATGCTGGGGCCCCGT
5 GGAAGACCTATGCTTTC AAGGGGGACTATGTGTGGACTGTATCAGATTCAGGA
CCGGGCCCCCTTGTTCAGAGTGTCTGCCCTTTGGGAGGGGGCTCCCCGAAACCTGG
ATGCTGCTGTCTACTCGCCTCGAACACAATGGATTCACTTCTTTAAGGGAGACAA
GGTGTGGCGCTACATTAATTTCAAGATGTCTCCTGGCTTCCCCAAGAAGCTGAAT
AGGGTAGAACCTAACCTGGATGCAGCTCTCTATTGGCCTCTCAACCAAAAGGTGT
10 TCCTCTTTAAGGGCTCCGGGTACTGGCAGTGGGACGAGCTAGCCCGAAGTACTGACTT
CAGCAGCTACCCCAAACCAATCAAGGGTTTGTTCACGGGAGTGCCAAACCAGCC
CTCGGCTGCTATGAGTTGGCAAGATGGCCGAGTCTACTTCTTCAAGGGCAAAGTC
TACTGGCGCCTCAACCAGCAGCTTCGAGTAGAGAAAGGCTATCCCAGAAATATTT
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15 GAATACCACTCCCTCAGGTACGGGCATAACCTTGGATACCACTCTCTCAGCCACA
GAAACCACGTTTGAATACTGACTGCTCACCCACAGACACAATCTTGGACATTAAC
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20 GTGCATTTTCACTCCTGAGAAGTGCTCCCCTAACTCAGATCCCCTAACTTAGATTT
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25 CAGATTCCCCTTTGCAACATTAGGTTAAGACCAGTACTGCAGGATTGTTGCACT
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30 AAGAAAAGAGCAGCAACAGCAGAGGCTGGACTCCCTGGTTCAGTATTTAATGCC
ATTTTATTACATGCTCCCATGTTCTCCCTCCCTCCCATTTGTAGCCTTGCTGCCCA
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35 CATCCTATGCAGCCCTGAAGACCAGGCTCCTTTGGGCAAAAGGCAAGACTCTGG
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GGTCCTGAGGCAGGCACTGCCCTGTGGTCTTCCCCAGGTTGAGGAGAGAAAGTGG
AAGCCCCATGGAAGACAGTGTCTCCAGCTGAGGTAGGAGGCGGAGGTGGGGGTG
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40 ACCCCCTAATGAAGGGCCTGGAGGTTGGGGTATCTTGGAGCTCCTCAGAGCCCTT
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45 CCTGTCTCTGCAAAAAAATAAAAAACGAATACATAAAAAATTAAAAA

SEQ ID NO: 42

>gi|1923242|gb|U83410.1|HSU83410 Human CUL-2 (cul-2) mRNA, complete cds

1
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5 ATGTTGGAATACGTCGAAAGAGCAACATGGAATGACCGTTTCTCAGATATCTATG
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10 AATTAACAGAAGCGGACCTTCAGTATGGCTATGGTGGTGTAGATATGAATGAAC
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TGGTGGAGAAGACCCAAACCAGAAAGTAATCCATGGGGTTATTAACCTCTTTGTT
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15 AGTCTCCCTTTTCTGACTGAAACAGGAGAGTATTACAAACAAGAAGCTTCAAATTT
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20 GTCTTACTCCGTGCTGTGTCCACTGGTTTACCTCATATGATTCAGGAGCTGCAAA
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25 TGCTTGCTAAGTACTGTGACAACTTACTGAAGAAGTCAGCGAAAGGGATGACAG
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30 GTGTCAGCGCTGATCTCAACAATAAGTTCAACAATTTTATCAAAAACCAAGACAC
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35 TATGTAGCCATGGTTACAACATAACCAATGGCAGTTCTTCTTGCCCTTTAACAACA
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40 GAAATGGAGCAGACTAGAAGTGCAGTTGATGAGGACCGGAAAATGTATCTCCAA
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GTCGGCAGATGAATACAGCTACGTCGCGTGATGTCGCTCTCCTCCAGCGTGGTGT
45 GAGAAGATCATTGCCATCACCATTTGGTGTGTTCTGTGGGAAAAAGCAGGACTG
TGCCTCCATAATTTGGTCATTTGGCAGCCCCTGTTTTCTGCTGTTTACAACATCAC
CAGTGCCACGTCATGAGCGTCAAAGAAAAATGCCTAGAGATATTTCAAGCTCATG
ACATTATGACATTTCTTAAACCTTTATTA AAAAGAAATGAGTGAAGTATTGCTGAAA
AGTGGA AAATCGGTTGGGTACCATGCTTTTTCTCCCTTCACGTTTGCAGTTGATG

TGTCCTTTTTTTTTTTTTTTAATGTATCTTAAAGGACATAAAATTTAAAAACTTAAA
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GATACTGCTGCTTGTCAAATAAAAAAAAAAAAAAAAAA

5 SEQ ID NO: 43

>gi|1337927|gb|W49672.1|W49672.zc41f07.s1 Soares_senescent_fibroblasts_NbHSF Homo sapiens cDNA clone IMAGE:324901 3'

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10 AAATGCAACTGTTCAAGTACACTGGGAACAGTTTTAAGGTACACCTGCAGTACA
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AACTGTTTTCCAAGCAGAGCTCCCTAATGGTTTTCAATTTCTGGGCCTACAACC
15 AAANGGGGACCCAGTTGGAAGCTGCCGTTTGGGAAACGTGGGCCAGGCATCAG
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SEQ ID NO: 44

>3486371H1

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ACCCATGAGTGGGCGGTTTAAGGACCGGGTGTCTTGGGATGGGAATCCTGAGCG
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ACCTGCCAGGTGAAGAACCCACCTGATGTT

25

SEQ ID NO: 45

>gi|595923|gb|U16811.1|HSU16811 Human Bak mRNA, complete cds

GAGGATCTACAGGGGACAAGTAAAGGCTACATCCAGATGCCGGGAATGCACTGA
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30 GCCCTCGGACCTCCATCTCCACCCTGCTGAGCCACCCGGGTTGGGCCAGGATCC
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35 TCACCTTACCTCTGCAACCTAGCAGCACCATGGGGCAGGTGGGACGGCAGCTCG
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CACCAGCCTGTTTGAGAGTGGCATCAATTGGGGCCGTGTGGTGGCTCTTCTGGGC
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40 GCCAGGTGACCCGCTTCGTGGTCGACTTCATGCTGCATCACTGCATTGCCCGGTG
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45 AAGAGTACAGAAGCTTTAGCAAGTGTGCACTCCAGCTTCGGAGGCCCTGCGTGG
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CTGTCTGCTAGGCGCTGGGGAGACTGATAACTTGGGGAGGCAAGAGACTGGGAG
CCACTTCTCCCCAGAAAGTGTTTAACGGTTTTAGCTTTTATAATACCCTTGTGAG

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5 TCCTCCCTCCGGCCATACTGCCTTTGCAGTTGGACTCTCAGGGATTCTGGGGCTTGG
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10 GGACTTGGTTTGTATATCAGGGAAAAGGAGTAGGGAGTTCATCTGGAGGGTTCT
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TGAACCTCTGTTCCCCCACCTCCATGCTCCTCACCTGTCTAGGTCTCCTCAGGGTG
GGGGGTGACAGTGCCTTCTCTATTGGCACAGCCTAGGGTCTTGGGGGTGAGGGG
15 GGAGAAGTTCTTGATTCAGCCAAATGCAGGGAGGGGAGGCAGATGGAGCCCAT
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AAAAACGGAGATCC

SEQ ID NO: 46

20 >gi|1940946|gb|AA293050.1|AA293050 zt54d02.r1 Soares ovary tumor NbHOT Homo
sapiens cDNA clone IMAGE:726147 5'
GGTGCTGTTTAAAGTCACATCCCTGTAAATTGCAGAATTCAAAAGTGATTATCTC
TTTGATCTACTTGCCTCATTTCCCTATCTTCTCCCCACGGTATCCTAAACTTTAG
ACTTCCCCTGTTCTGAAAGGAGACATTGCTCTATGTCTGCCTTCGACCACAGCA
25 AGCCATCATCCTCCATTGCTCCCGGGGACTCAAGAGGAATCTGTTTCTCTGCTGT
CAACTTCCCCTGCTGGCTCAGCATAGGGTCACTTTGCCATTATGCAAATGGAGATA
AAAGCAATTCTGACTGTCCAGGAGCTAATCTGACCGTTCTATTGTGTGGATGACC
ACATAAGAAGGCAATTTTAGTGTATTAATCATAGATTATTATAAACTATAAACTT
AAGGGCAAGGAGTTTATTACAATGTATCTTTATTAAACAAAAGGGTGTATAGTG
30 TTCACAAACTGTGAAAATAGTGT

SEQ ID NO: 47

>gi|757037|gb|R06417.1|R06417 yf09a05.s1 Soares fetal liver spleen 1NFLS Homo sapiens
cDNA clone IMAGE:126320 3' similar to gb:M23410 PLAKO GLOBIN (HUMAN);
35 TTTTTC AACGCATCTGTGTTATTTTATTTTCTTTGCTTTGGTCTATACAAAAAAC
CAATAACCAAAAACATAAAGCGATAATAATAAAACACTCTGCTTGGACCTCCCC
CAGCCCCCACACCATGTGCGGGAAATGGGGGGTCTGAAACAGGAAGGGGAA
GAGAAAGCCCCCTCACACACACAGAGGGGTGAGCCAAGAGCACTTNTCGGGGT
CAGCTAGGGGCAGCTGTGTGGGGTGGGGACAGGGGTTTGAGGGAAGCTNTCCCC
40 AGAGCTCCCTGGGGNAGTTGAGGGGGTGGGGCAAAGCCAACCTAAGGCACCCTG
GGGAGAGAGAA

SEQ ID NO: 48

>1321982H1

45 CCGGCCTTGGAACAACTGTGGAACCTGAGGCCGCTTGCCCTCCCGCCCCATGGAG
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CGATGGT

SEQ ID NO: 49

>gi|2215504|gb|AA488073.1|AA488073 ab13d08.s1 Stratagene lung (#937210) Homo sapiens cDNA clone IMAGE:840687 3' similar to gb:J05582 MUCIN 1 PRECURSOR

5 (HUMAN);G TTCAGGATCCCCGCTATCTCAGGGCTCTCTGGGCCAGTCCTCCTGGG
AGCCCCACCACAACACTTCCAGGCATGAGCTCTCAGGCGCCACATGAGCTTCC
ACACACTGAGAAGTGTCCGAGAAATTGGTGGGGCCTCTGAAGGACGTGTGAGCA
GCCACCTGAACTCCCAGCTCACCAGCCCAAACAGGGTGCAGGGGCTCTGGCCTG
AAGAACCTGAGTGGAGTGAATGGCACTGGCTGGCCACTCAGCTCAGCGGGCGA
10 CGTGCCCCTACAAGTTGGCAGAAAGTGGCTGCCACTGCTGGGTTTGTGTAAGAGAG
GCTGCTGCACCATTACCTGCAGAAACCTTCTCATAGGGGCTACGATCGGTACTGC
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GGTAAGTATCCCGGGCTGGAAAGATGTCCAGCTGCCCCGTAATTCTTTCCGCGGCA
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15 GACCAGCACCAACAGCGCATGGCCCCAGCCTGGACC

SEQ ID NO: 50

>gi|32468|emb|X63368.1|HSHSJ1MR H.sapiens HSJ1 mRNA

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AAGGAGGTGGCCGAGGCATATGAAGTGCTGTCTGACAAGCACAAAGCGGGAGATT
TACGACCGCTATGGCCGGGAAGGGCTGACAGGGACAGGAAGTGGCCCATCTCGG
GCAGAAGCTGGCAGTGGTGGGCCTGGCTTCACCTTCACCTTCGCGAGCCCCGAGG
25 AGGTCTTCCGGGAATTCTTTGGGAGTGGAGACCCTTTTGCAGAGCTCTTTGATGA
CCTGGGCCCCCTTCTCAGAGCTTCAGAACCGGGGTTCCCGACACTCAGGCCCTTC
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TTCAGTCCTGGGGCTGGTGCTTTTCGCTCTGTTTCTACATCTACCACCTTTGTCCA
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30 AAGTGGAGGAGGATGGGCAGCTGAAGTCAGTCACAATCAATGGTGTCCCAGATG
ACCTGGCACGTGGCTTGGAGCTGAGCCGTCGCGAGCAGCAGCCGTCAGTCACTTC
CAGGTCTGGGGGCACTCAGGTCCAGCAGACCCCTGCCTCATGCCCCTTGGACAGC
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35 GCAGGGGGCGCCCAAGGCCAGCACCAAGATCCAGGCTTGGGGGGGAGCCAGGA
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40 ACCCCAGTGTGGACTTGGGATTTGCTGTGCTCAGCCCAGGGCTGATAGGTCCCTG
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45 AGAGTGGAGCCTCCTGCTCTCCTGGACCAGCTGCAGACCCCCAACCTGGTTTCT
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10 TACAAATCCCAGAGTGCAGGTGTGCCCGGCCTCATTTCTGATAGATCCCGCTTGGG
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CTTGCTAGCCCCAGGGTTAGAGTGGGCAGGGCAGAGCCGCGCAGCACCTGGGAG
15 CGGTACCTTTCCCTTGGGCAGCCTGGGGTCCCAGGAACAAGCCAGGGCGAGTGG
CATGTCTGCCTGAGCAGGGTGTGGCCCCAGAAAGCTGAGGAGTGTGGGCTGGCA
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20 CCTGCCTGGGGAGCCCAGTGGCCAGGGAGGGAGTGGTGGAGCCAGTCGCTGTAA
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SEQ ID NO: 51

25 >gi|31112|emb|X00663.1|HSEGF01 Human mRNA fragment for epidermal growth factor
(EGF) receptor
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30 GGAGCTGCTGGGGTGCAGGAGAGGAGAACTGCCAGAAACTGACCAAAATCATCT
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35 TGGTGCCACCTGCGTGAAGAAGTGTCCCCGTAATTATGTGGTGACAGATCACGGC
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45 TGTGCTATGCAAATACAATAAACTGGAAAAAACTGTTTGGGACCTCCGGTCAGA
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GCGTCTCTTGCCGGAATGTCAGCCGAGGCAGGGAATGCGTGGACAAGTGAACC
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 5 GGTCTTGAAGGCTGTCCAACGAATGGGCCTAAGATCCCGTCCATCGCCACTGGGA
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 GCGAAGGCGCCACATCGTTCGGAAGCGCACGCTGCGGAGGCTGCTGCAGGAGAG
 GGAGCTTGTGGAGCCTCTTACACCCAGTGGAGAAGCTCCCAACCAAGCTCTCTTG
 AGGATCTTGAAGGAACTGAATTCAAAAAGATCAAAGTGCTGGGCTCCGGTGCG
 10 TTCGGCACGGTGTATAAGGGACTCTGGATCCCAGAAGGTGAGAAAGTTAAAATT
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 ATCCTCGATGAAGCCTACGTGATGGCCAGCGTGGACAACCCCCACGTGTGCCGCC
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 15 CTGCTCAACTGGTGTGTGCAGATCGCAAAGGGCATGAACTACTTGGAGGACCGT
 CGCTTGGTGCACCGCGACCTGGCAGCCAGGAACGTACTGGTGAAAACACCGCAG
 CATGTCAAGATCACAGATTTTGGGCTGGCCAACTGCTGGGTGCGGAAGAGAAA
 GAATACCATGCAGAAGGAGGCAAAGTGCCTATCAAGTGGATGGCATTGGAATCA
 ATTTTACACAGAATCTATACCCACCAGAGTGATGTCTGGAGCTACGGGGTGACCG
 20 TTTGGGAGTTGATGACCTTTGGATCCAAGCCATATGACGGAATCCCTGCCAGCGA
 GATCTCCTCCATCCTGGAGAAAGGAGAACGCCTCCCTCAGCCACCCATATGTACC
 ATCGAT

SEQ ID NO: 52

25 >gi|1162923|gb|L41147.1|HUM5HSR Homo sapiens 5-HT6 serotonin receptor mRNA,
 complete cds
 CCCGAGAGCGCCCATTCACCCCCCTCACCCACCTCCCCGCGTTCCCACTTCCCCG
 CACTCTGACCCGGCCGGACGCCCCCTCCCCTATCTTGCCGCCCCGCCCCCTCCAGGG
 GGCTCTGCTCCCACCCAGGGAGCCCATCCGACCTCTGCTTGACTTCCCGCCGCT
 30 TCCTTCAGGGGCTCGGCTCATCGGGTGCCCCCTCCCCAACTTCCAACCCGTTTG
 CTCCAGGAGTTCTGCCCCATCCCCGAGGGCGCCCAAATAGCCACACTGTGTCT
 CCTGTAGTCGCCGCCCCCTGACCTAGCGCGACCCAGCGCCCCCGCCCATGTCCCC
 CCACTCACCTCCCCCGGGGGGCGTGGTGAAGTCGCGGTCTGTTCTACGGACGGTC
 CCCGTCCAGCCTGCGCTTCGCCGGGGCCCTCATCTGCTTTCCCGCCACCCTATCA
 35 TCCCTTGCCGTCCACCCTCGGTCTCATGGTCCCAGAGCCGGGCCCAACCGCCAA
 TAGCACCCCGGCCCTGGGGGGCAGGGCCGCGCTCGGCCCGGGGGGCGAGCGGCTG
 GGTGGCGGCCGCGCTGTGCGTGGTCATCGCGCTGACGGCGGCGGCCAACTCGCT
 GCTGATCGCGCTCATCTGCACTCAGCCCCGCGCTGCGCAACACGTCCAACCTCTTC
 CTGGTGTGCTCTTCACGTCTGACCTGATGGTGGGGCTGGTGGTGATGCCGCCGG
 40 CCATGCTGAACGCGCTGTACGGGCGCTGGGTGCTGGCGCGCGGCCTCTGCCTGCT
 CTGGACCGCCTTCGACGTGATGTGCTGCAGCGCCTCCATCCTCAACCTCTGCCTC
 ATCAGCCTGGACCGCTACCTGCTCATCCTCTCGCCGCTGCGCTACAAGCTGCGCA
 TGACGCCCTGCGTGCCCTGGCCCTAGTCCTGGGCGCCTGGAGCCTCGCCGCTCT
 CGCCTCCTTCCTGCCCTGCTGCTGGGCTGGCACGAGCTGGGCCACGCACGGCCA
 45 CCCGTCCCTGGCCAGTGCCGCCTGCTGGCCAGCCTGCCTTTTGTCTTGTGGCGTC
 GGGCCTCACCTTCTTCCTGCCCTCGGGTGCCATATGCTTCACCTACTGCAGGATCC
 TGCTAGCTGCCCCGAAGCAGGCGGTGCAGGTGGCCTCCCTCACCACCGGCATGGC
 CAGTCAGGCCTCGGAGACGCTGCAGGTGCCAGGACCCACGCCAGGGGTGGA
 GTCTGCTGACAGCAGGCGTCTAGCCACGAAGCACAGCAGGAAGGCCCTGAAGGC

CAGCCTGACGCTGGGCATCCTGCTGGGCATGTTCTTTGTGACCTGGTTGCCCTTCT
TTGTGGCCAAACATAGTCCAGGCCGTGTGCGACTGCATCTCCCCAGGCCCTCTTCGA
TGTCCTCACATGGCTGGGTTACTGTAACAGCACCATGAACCCCATCATCTACCCA
CTCTTCATGCGGGACTTCAAGCGGGCGCTGGGCAGGTTCTGCCATGTCCACGCT
5 GTCCCCGGGAGCGCCAGGCCAGCCTGGCCTCGCCATCACTGCGCACCTCTCACAG
CGGCCCCCGGCCCGGCCTTAGCCTACAGCAGGTGCTGCCGCTGCCCTGCCGCCG
GACTCAGATTTCGGACTCAGACGCAGGCTCAGGCGGCTCCTCGGGCCTGCCGGCTC
ACGGCCCAGCTGCTGCTTCTGCGAGGCCACCCAGGACCCCCCGCTGCCACCA
GGGCCGCTGCCGCCGTCAATTTCTTCAACATCGACCCCGCGGAGCCCGAGCTGCG
10 GCCGCATCCACTTGGCATCCCCACGAACTGACCCGGGCTTGGGGCTGGCCAATGG
GGAGCTGGATTGAGCAGAACCCAGACCCTGAGTCCTTGGGCCAGCTCTTGGCTA
AGACCAGGAGGCTGCAAGTCTCCTAGAAGCCCTCTGAGCTCCAGAGGGGTGCGC
AGAGCTGACCCCTGCTGCCATCTCCAGGCCCTTACCTGCAGGGATCATAGCTG
ACTCAGA

15 SEQ ID NO: 53

>gi|181970|gb|M32977.1|HUMEGFAA Human heparin-binding vascular endothelial growth factor (VEGF) mRNA, complete cds

CAGTGTGCTGGCGGCCCGCGCGAGCCGGCCCCGGCCCCGGTCCGGCCCTCCGAAA
20 CCATGAACTTTCTGCTGTCTTGGGTGCATTGGAGCCTCGCCTTGCTGCTCTACCTC
CACCATGCCAAGTGGTCCCAGGCTGCACCCATGGCAGAAGGAGGAGGGCAGAAT
CATCACGAAGTGGTGAAGTTCATGGATGTCTATCAGCGCAGCTACTGCCATCCAA
TCGAGACCCTGGTGGACATCTTCCAGGAGTACCCTGATGAGATCGAGTACATCTT
CAAGCCATCCTGTGTGCCCTGATGCGATGCGGGGGCTGCTGCAATGACGAGGG
25 CCTGGAGTGTGTGCCCACTGAGGAGTCCAACATCACCATGCAGATTATGCGGATC
AAACCTCACCAAGGCCAGCACATAGGAGAGATGAGCTTCCTACAGCACAACAAA
TGTAATGCAGACCAAAGAAAGATAGAGCAAGACAAGAAAATCCCTGTGGGCCT
TGCTCAGAGCGGAGAAAGCATTTGTTTGTACAAGATCCGCAGACGTGTAAATGTT
CCTGCAAAAACACAGACTCGCGTTGCAAGGCGAGGCAGCTTGAGTTAAACGAAC
30 GTACTTGCAGATGTGACAAGCCGAGGCGGTGAGCCGGGCAGGAGGAAGGAGCCT
CCCTCAGGGTTTCGGGAACCAGATCTCTCACCAGGAAAGACTGATACAGAACGA
TCGATACAGAAACACGCTGCCGCCACCACACCATCACCATCGACAGAACAGTC
CTTAATCCAGAAACCTGAAATGAAGGAAGAGGAGACTCTGCGCAGAGCACTTTG
GGTCCGGAGGGCGAGACTCCGGCGGAAGCATTCCCGGGCGGGTGACCCAGCACG
35 GTCCCTCTTGGAATTGGATTTCGCCATTTTATTTTCTTGCTGCTAAATCACCAGC
CCGGAAGATTAGAGAGTTTTATTTCTGGGATTCTGTAGACACACCGCGGCCGCC
AGCACACTG

40 SEQ ID NO: 54

>3014785H1

GCTCAACCCCTCTGGGCACCAACCCTGCATTGCAGGTTGGCACCTTACTTCCCTG
GGATCCCCAGAGTTGGTCCAAGGAGGGAGAGTGGGTTCTCAATACGGTACCAAA
GATATAATCACCTAGGTTTACAAATATTTTATAGGACTCACGTTAACTCACATTTAT
ACAGCAGAAATGCTATTTTGTATGCTGTAAAGTTTTCTATCTGTGTACTTTTTTTT
45 AAGGGAAAGATTTTAATATTAAACCTGGTGCT

SEQ ID NO: 55

>853668H1

CGCAGGTGGACGTCTGATTTATGAAGCTCCCCATCCACCTATCTGAGTACCTGAC
TTCTCAGGACTGACACCTACAGCATCAGGTACACAGCTTCTCCTAGCATGACTTC
GATCTGATCAGCAAACAAGAAAATTTGTCTCCCGTAGTTCTGGGGCGTGTTCACC
ACCTACAACCACAGAGCTGTCATGGCTGCCATCTCTACTTCCATCCCTGTAATTTCC
5 ACAGCCCCAG

SEQ ID NO: 56

>gi|2072500|gb|U96113.1|HSU96113 Homo sapiens Nedd-4-like ubiquitin-protein ligase
WWP1 mRNA, partial cds

10 GACTAATCATGTACCTACAAGCACTCTAGTCCAAAACCTCATGCTGCTCGTATGTA
GTAAATGGAGACAACACACCTTCATCTCCGTCTCAGGTTGCTGCCAGACCCAAAA
ATACACCAGCTCCAAAACCACTCGCATCTGAGCCTGCCGATGACACTGTAAATGG
AGAATCATCCTCATTTGCACCAACTGATAATGCGTCTGTCACGGGTACTCCAGTA
GTGTCTGAAGAAAATGCCTTGTCTCCAAATTGCACTAGTACTACTGTTGAAGATC
15 CTCCAGTTCAAGAAATACTGACTTCCTCAGAAAACAATGAATGTATTCCTTCTAC
CAGTGCAGAATTGGAATCTGAAGCTAGAAGTATATTAGAGCCTGACACCTCTAAT
TCTAGAAGTAGTTCTGCTTTTGAAGCAGCCAAATCAAGACAGCCAGATGGGTGTA
TGGATCCTGTACGGCAGCAGTCTGGGAATGCCAACACAGAAACCTTGCCATCAG
GGTGGGAACAAAGAAAAGATCCTCATGGTAGAACCTATTATGTGGATCATAATA
20 CTCGAACCTACCACATGGGAGAGACCACAACCTTTACCTCCAGGTTGGGAAAGAA
GAGTTGATGATCGTAGAAGAGTTTATTATGTGGATCATAACACCAGAACAACAA
CGTGGCAGCGGCCTACCATGGAATCTGTCCGAAATTTTGAACAGTGGCAATCTCA
GCGGAACCAATTGCAGGGAGCTATGCAACAGTTTAACCAACGATACCTCTATTTCG
GCTTCAATGTTAGCTGCAGAAAATGACCCTTATGGACCTTTGCCACCAGGCTGGG
25 AAAAAAGAGTGGATTCAACAGACAGGGTTTACTTTGTGAATCATAACACAAAAA
CAACCCAGTGGGAAGATCCAAGAACTCAAGGCTTACAGAATGAAGAACCCCTGC
CAGAAGGCTGGGAAATTAGATATACTCGTGAAGGTGTAAGGTACTTTGTTGATCA
TAACACAAGAACAACAACATTCAAAGATCCTCGCAATGGGAAGTCATCTGTAAC
TAAAGGTGGTCCACAAATTGCTTATGAACGCGGCTTTAGGTGGAAGCTTGCTCAC
30 TTCCGTTATTTGTGCCAGTCTAATGCACTACCTAGTCATGTAAAGATCAATGTGTC
CCGGCAGACATTGTTTGAAGATTCCCTTCCAACAGATTATGGCATTAAAACCCTAT
GACTTGAGGAGGCGCTTATATGTAATATTTAGAGGAGAAGAAGGACTTGATTAT
GGTGGCCTAGCGAGAGAATGGTTTTTCTTGCTTTACATGAAGTTTTGAACCCAA
TGTATTGCTTATTTGAGTATGCGGGCAAGAACAACCTATTGTCTGCAGATAAATCC
35 AGCATCAACCATTAATCCAGACCATCTTTCATACTTCTGTTTCATTGGTCGTTTTA
TTGCCATGGCACTATTTTCATGGAAAGTTTATCGATACTGGTTTCTCTTTACCATT
TACAAGCGTATGTTAAGTAAAAAACTTACTATTAAGGATTTGGAATCTATTGATA
CTGAATTTTATAACTCCCTTATCTGGATAAGAGATAACAACATTGAAGAATGTGG
CTTAGAAATGTACTTTTCTGTTGACATGGAGATTTTGGGAAAAGTTACTTCACAT
40 GACCTGAAGTTGGGAGGTTCCAATATTCTGGTGAAGTGAAGGAGAACAAGATGAA
TATATTGGTTTAAATGACAGAATGGCGTTTTTCTCGAGGAGTACAAGAACAGACCA
AAGCTTTCCTTGATGGTTTTAATGAAGTTGTTTCTTCTCAGTGGCTACAGTACTTC
GATGAAAAAGAATTAGAGGTTATGTTGTGTGGCATGCAGGAGGTTGACTTGGA
GATTGGCAGAGAAATACTGTTTATCGACATTATACAAGAAACAGCAAGCAAATC
45 ATTTGGTTTTTGGCAGTTTGTGAAAGAGACAGACAATGAAGTAAGAATGCGACTA
TTGCAGTTCGTCCTGGAACCTGCCGTTTACCTCTAGGAGGATTTGCTGAGCTCA
TGGGAAGTAATGGGCCCCGGAATTC

SEQ ID NO: 57

>gi|1940670|gb|AA292676.1|AA292676 zt21c12.s1 Soares ovary tumor NbHOT Homo sapiens cDNA clone IMAGE:713782 3'

5 TTTTITTAACGCTCCCAAGATGTCACGTTTATTGCAACTGAGCAGAGACAGGCTG
TGCGGACCTTCCTCAATCCCGTCCAACCCCGAGCCCCTCCCCAAGCCCCCGCTGC
AACTACGCCGGCAGGTCCGCAGAGTGTTGCTTGACAGCGCGTGGCGGTGCCCGT
GAGTCTTAAGACACCTGCCAAGTCTCTGGCGCCGTTTCAGTCATAGGTAGAGGGAC
TCCATGAGGGCACTGCCCC

10 SEQ ID NO: 58

>gi|13027659|gb|AF023476.2|AF023476 Homo sapiens meltrin-L precursor (ADAM12) mRNA, complete cds, alternatively spliced

CACTAACGCTCTTCCTAGTCCCCGGGCCAACTCGGACAGTTTGCTCATTATTGCA
ACGGTCAAGGCTGGCTTGTGCCAGAACGGCGCGCGCGACGCACGCACACACA
15 CGGGGGGAAACTTTTTTAAAAATGAAAGGCTAGAAGAGCTCAGCGGCGGCGCGG
GCCGTGCGCGAGGGCTCCGGAGCTGACTCGCCGAGGCAGGAAATCCCTCCGGTC
GCGACGCCCGGCCCGCTCGGCGCCCCGCGTGGGATGGTGCAGCGCTCGCCGCCG
GGCCCGAGAGCTGCTGCACTGAAGGCCGGCGACGATGGCAGCGCGCCCGCTGCC
CGTGTCCCCCGCCCGCGCCCTCCTGCTCGCCCTGGCCGGTGCTCTGCTCGCGCCCT
20 GCGAGGCCCGAGGGGTGAGCTTATGGAACCAAGGAAGAGCTGATGAAGTTGTCA
GTGCCTCTGTTTCGGAGTGGGGACCTCTGGATCCCAGTGAAGAGCTTCGACTCCAA
GAATCATCCAGAAGTGCTGAATATTCGACTACAACGGGAAAGCAAAGAAGTATGAT
CATAAATCTGGAAAGAAATGAAGGTCTCATTGCCAGCAGTTTCACGGAAACCCA
CTATCTGCAAGACGGTACTGATGTCTCCCTCGCTCGAAATTACACGGTAATTCTG
25 GGTCACTGTTACTACCATGGACATGTACGGGGATATTCTGATTACAGCAGTCAGTC
TCAGCACGTGTTCTGGTCTCAGGGGACTTATTGTGTTTGAAAATGAAAGCTATGT
CTTAGAACCAATGAAAAGTGCAACCAACAGATACAAACTCTTCCCAGCGAAGAA
GCTGAAAAGCGTCCGGGGATCATGTGGATCACATCACACACACCAACCTCGC
TGCAAAGAATGTGTTTCCACCACCCTCTCAGACATGGGCAAGAAGGCATAAAAG
30 AGAGACCCTCAAGGCAACTAAGTATGTGGAGCTGGTGATCGTGGCAGACAACCG
AGAGTTTCAGAGGCAAGGAAAAGATCTGGAAAAAGTTAAGCAGCGATTAATAGA
GATTGCTAATCACGTTGACAAGTTTTACAGACCACTGAACATTCGGATCGTGTTG
GTAGGCGTGGAAGTGTGGAATGACATGGACAAATGCTCTGTAAGTCAGGACCCA
TTCACCAGCCTCCATGAATTTCTGGACTGGAGGAAGATGAAGCTTCTACCTCGCA
35 AATCCCATGACAATGCGCAGCTTGTGAGTGGGGTTTATTTCGAAGGGACCACCAT
CGGCATGGCCCCAATCATGAGCATGTGCACGGCAGACCAGTCTGGGGGAATTGT
CATGGACCATTACAGACAATCCCCTTGGTGCAGCCGTGACCCTGGCACATGAGCTG
GGCCACAATTTCTGGGATGAATCATGACACACTGGACAGGGGCTGTAGCTGTCAA
ATGGCGGTTGAGAAAGGAGGCTGCATCATGAACGCTTCCACCGGGTACCCATTTC
40 CCATGGTGTTCAGCAGTTGCAGCAGGAAGGACTTGGAGACCAGCCTGGAGAAAG
GAATGGGGGTGTGCCTGTTTAACTGCCGGAAGTCAGGGAGTCTTTCGGGGGCC
AGAAGTGTGGGAACAGATTTGTGGAAGAAGGAGAGGAGTGTGACTGTGGGGAG
CCAGAGGAATGTATGAATCGCTGCTGCAATGCCACCACCTGTACCCTGAAGCCG
GACGCTGTGTGCGCACATGGGCTGTGCTGTGAAGACTGCCAGCTGAAGCCTGCA
45 GGAACAGCGTGCAGGGACTCCAGCAACTCCTGTGACCTCCCAGAGTTCTGCACA
GGGGCCAGCCCTCACTGCCCAGCCAACGTGTACCTGCACGATGGGCACTCATGTC
AGGATGTGGACGGCTACTGCTACAATGGCATCTGCCAGACTCACGAGCAGCAGT
GTGTCACACTCTGGGGACCAGGTGCTAAACCTGCCCCTGGGATCTGCTTTGAGAG
AGTCAATTCTGCAGGTGATCCTTATGGCAACTGTGGCAAAGTCTCGAAGAGTTCC

TTTGCCAAATGCGAGATGAGAGATGCTAAATGTGGAAAAATCCAGTGTCAAGGA
GGTGCCAGCCGGCCAGTCATTGGTACCAATGCCGTTTCCATAGAAACAAACATCC
CCCTGCAGCAAGGAGGCCGGATTCTGTGCCGGGGGACCCACGTGTACTTGGGCG
ATGACATGCCGGACCCAGGGCTTGTGCTTGCAGGCACAAAGTGTGCAGATGGAA
5 AAATCTGCCTGAATCGTCAATGTCAAAATATTAGTGTCTTTGGGGTTACAGAGTG
TGCAATGCAGTGCCACGGCAGAGGGGTGTGCAACAACAGGAAGAACTGCCACTG
CGAGGCCCACTGGGCACCTCCCTTCTGTGACAAAGTTTGGCTTTGGAGGAAGCACA
GACAGCGGCCCCATCCGGCAAGCAGATAACCAAGGTTTAACCATAGGAATTCTG
GTGACCATCCTGTGTCTTCTTGCTGCCGGATTTGTGGTTTATCTCAAAAGGAAGA
10 CCTTGATACGACTGCTGTTTACAAATAAGAAAGACCACCATTGAAAACTAAGGT
GTGTGCGCCCTTCCCGGCCACCCCGTGGCTTCCAACCCTGTCAGGCTCACCTCGG
CCACCTTGGAAGAGGCTGATGAGGAAGCCGCCAGATTCTACCCACCGAAGGA
CAATCCCAGGAGATTGCTGCAGTGTGAGAATGTTGACATCAGCAGACCCCTCAAC
GGCCTGAATGTCCCTCAGCCCCAGTCAACTCAGCGAGTGCTTCCTCCCTCCACC
15 GGGCCCCACGTGCACCTAGCGTCCCTGCCAGACCCCTGCCAGCCAAGCCTGCACT
TAGGCAGGCCCAGGGGACCTGTAAGCCAAACCCCCCTCAGAAGCCTCTGCCTGC
AGATCCTCTGGCCAGAACAACCTCGGCTCACTCATGCCTTGGCCAGGACCCAGGA
CAATGGGAGACTGGGCTCCGCCTGGCACCCCTCAGACCTGCTCCACAATATCCAC
ACCAAGTGCCAGATCCACCCACACCGCCTATATTAAGTGAGAAGCCGACACCTT
20 TTTTCAACAGTGAAGACAGAAGTTTGCACATCTTTCAGCTCCAGTTGGAGTTTTT
TGTACCAACTTTTAGGATTTTTTTTAAATGTTTAAACATCATTACTATAAGAACTT
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GTACTTGTAATTTATTAATTTATGCAGAATGTTGATTACAGTGCAGTGCGCTGTA
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25 AGTATTTTAGTGAACCTGAAATATCCTGCTTGATGGGATTCTGGACAGGATGTGT
TTGCTTTCTGATCAAGGCCTTATTGGAAAGCAGTCCCCCAACTACCCCAAGCTGT
GCTTATGGTACCAGATGCAGCTCAAGAGATCCCAAGTAGAATCTCAGTTGATTTT
CTGGATTCCCCATCTCAGGCCAGAGCCAAGGGGCTTCAGGTCCAGGCTGTGTTTG
GCTTTCAGGGAGGCCCTGTGCCCCTTGACAACCTGGCAGGCAGGCTCCCAGGGAC
30 ACCTGGGAGAAATCTGGCTTCTGGCCAGGAAGCTTTGGTGAGAACCTGGGTTGC
AGACAGGAATCTTAAGGTGTAGCCACACCAGGATAGAGACTGGAACACTAGACA
AGCCAGAACTTGACCCTGAGCTGACCAGCCGTGAGCATGTTTGGAAGGGGTCTG
TAGTGTCACTCAAGGCGGTGCTTGATAGAAATGCCAAGCACTTCTTTTCTCGCT
GTCCTTTCTAGAGCACTGCCACCAGTAGGTTATTTAGCTTGGGAAAGGTGGTGT
35 TCTGTAAGAAACCTACTGCCCAGGCACTGCAAACCGCCACCTCCCTATACTGCTT
GGAGCTGAGCAAATCACCACAACTGTAATACAATGATCCTGTATTCAGACAGA
TGAGGACTTTCCATGGGACCACAACCTATTTTCAGATGTGAACCATTAAACCAGATC
TAGTCAATCAAGTCTGTTTACTGCAAGGTTCAACTTATTAACAATTAGGCAGACT
CTTTATGCTTGCAAAAACTACAACCAATGGAATGTGATGTTTCATGGGTATAGTTC
40 ATGTCTGCTATCATTATTCGTAGATATTGGACAAAGAACCTTCTCTATGGGGCAT
CCTCTTTTTCCAACCTGGCTGCAGGAATCTTTAAAAGATGCTTTTAAACAGAGTCTG
AACCTATTTCTTAAACACTTGCAACCTACCTGTTGAGCATCACAGAATGTGATAA
GGAAATCAACTTGCTTATCAACTTCCTAAATATTATGAGATGTGGCTTGGGCAGC
ATCCCCTTGAACCTTCACTCTTCAAAATGCCTGACTAGGGAGCCATGTTTCAAA
45 GGCTTTAAAGTGAATAATGGCATGAGAAATACAAAAATACTCAGATAAGGTAA
AATGCCATGATGCCTCTGTCTTCTGGACTGGTTTTCACATTAGAAGACAATTGAC
AACAGTTACATAATTCCTCTGAGTGTTTTATGAGAAAGCCTTCTTTTGGGGTCA
ACAGTTTTCTATGCTTTGAAACAGAAAAATATGTACCAAGAATCTTGGTTTGCC
TTCCAGAAAACAAAACCTGCATTTCACTTCCCGGTGTTCCCCACTGTATCTAGGC

AACATAGTATTCATGACTATGGATAAACTAAACACGTGACACAAACACACACAA
AAGGGAACCCAGCTCTAATACATTCCAACCTCGTATAGCATGCATCTGTTTATTCT
ATAGTTATTAAGTTCTTTAAAATGTAAAGCCATGCTGGAAAATAATACTGCTGAG
ATACATACAGAATTACTGTAACCTGATTACACTTGGTAATTGTACTAAAGCCAAAC
5 ATATATATACTATTAAAAAGGTTTACAGAATTTTATGGTGCATTACGTGGGCATT
GTCTTTTTTAGATGCCCAAATCCTTAGATCTGGCATGTTAGCCCTTCCTCCAATTAT
AAGAGGATATGAACCAAAAAAAAAAAAAAAAAAAAAA

SEQ ID NO: 59

10 >gi|2166296|gb|AA452627.1|AA452627 zx33f03.r1 Soares_total_fetus_Nb2HF8_9w Homo
sapiens cDNA clone IMAGE:788285 5' similar to gb:S57498 ENDOTHELIN-1 RECEPTOR
PRECURSOR (HUMAN);
GGCAGTTTAATAGATGTTACTCAAAGAATTTTTTAAGAACTGTATTTTATTTTTTA
AATGGTGTTTTATTACAAGGGACCTTGAACATGTTTTGTATGTTAAATTCAAAAG
15 TAATGCTTCAATCAGATAGTTCTTTTTTACAAGTTCAATCTGTTTTTTCATGTAAAT
TTTGTATGAAAAATCAATGTCAAGTACCAAAATGTTAATGTATGTGTCATTTAAC
TCTGCCTGAGACTTTTCAAGTGCCTGTATATAGAAGTCTAAAACACACCTAAGAGA
AAAAGATCGAATTTTTTCAGATGATTGAGAAATTTTCATTCAGGTATTTGTAATAG
TGACATATATATGTATATACATATCACCTCCTATTCTCTTAATTTTTCTTAAAAATG
20 TTAAGTGGCAGTAAAGCTTTTTTGATCATTCCCTTTTCCATATAGGAAACATAATT
TTGAAGTGGCCAGATGAGTTTATCATGTGAGTGAATAATACCCACAAATGG
CACCAGAACTTACGATTCTTCACTTCTTGGGGTTTTTCAGTATGAACCTAACTCCCC
ACCCC

SEQ ID NO: 60

25 >gi|180167|gb|M58664.1|HUMCDA24A Homo sapiens CD24 signal transducer mRNA,
complete cds
CGGTTCTCCAAGCACCCAGCATCCTGCTAGACGCGCCGCGCACCGACGGAGGGG
ACATGGGCAGAGCAATGGTGGCCAGGCTCGGGCTGGGGCTGCTGCTGCTGGCAC
30 TGCTCCTACCCACGCAGATTTATTCCAGTGAAACAACAACCTGGAACCTCAAGTAA
CTCCTCCCAGAGTACTTCCAACCTCTGGGTTGGCCCCAAATCCAATAATGCCACC
ACCAAGGCGGCTGGTGGTGGCCTGCAGTCAACAGCCAGTCTCTTCGTGGTCTCAC
TCTCTCTTCTGCATCTCTACTCTTAAGAGACTCAGGCCAAGAAACGTCTTCTAAAT
TTCCCCATCTTCTAAACCCAATCCAATGGCGTCTGGAGTCCAATGTGGCAAGG
35 AAAAACAGGTCTTCATCGAATCTACTAATTCCACACCTTTTATTGACACAGAAAA
TGTTGAGAATCCCAAATTTGATTGATTTGAAGAACATGTGAGAGGTTTACTAGA
TGATGGATGCCAATATTAAATCTGCTGGAGTTTCATGTACAAGATGAAGGAGAG
GCAACATCCAAAATAGTTAAGACATGATTTCCCTTGAATGTGGCTTGAGAAATATG
GACACTTAATACTACCTTGAAAATAAGAATAGAAATAAAGGATGGGATTGTGGA
40 ATGGAGATTGAGTTTTTCATTTGGTGCTTAATTCTATAAGCGTATAAACAGGTAAT
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TACTGTAATTCCTCAACGTATTGTTTCGACGGCACTAATTTAATGCCGATATACTC
TAGATGAAGTTTACATTGTTGAGCTATTGCTGTTCTCTTGGGAACCTGAACCTCACT
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45 ATGTGCCAGGGCAATGATGAATGAGAATCTACCCAGATCCAAGCATCCTGAGC
AACTCTTGATTATCCATATTGAGTCAAATGGTAGGCATTTCTATCACCTGTTTCC
ATTCAACAAGAGCACTACATTCATTTAGCTAAACGGATTCCAAAGAGTAGAATTG
CATTGACCACGACTAATTTCAAAATGCTTTTTTATTATTATTTTTTTAGACAGTC
TCACTTTGTCGCCCAGGCCGGAGTGCAGTGGTGCATCTCAGATCAGTGTACCAT

TTGCCTCCCGGGCTCAAGCGATTCTCCTGCCTCAGCCTCCCAAGTAGCTGGGATT
ACAGGCACCTGCCACCATGCCCCGGCTAATTTTTTGTAAATTTAGTAGAGACAGGGT
TTCACCATGTTGCCCAGGCTGGTTTCGAACTCCTGACCTCAGGTGATCCACCCGC
CTCGGCCTCCCAAAGTGCTGGGATTACAGGCTTGAGCCCCCGCGCCAGCCATCA
5 AAATGCTTTTTATTTCTGCATATGTTTGAATACTTTTTACAATTTAAAAAATGAT
CTGTTTTGAAGGCAAAATTGCAAATCTTGAAATTAAGAAGGCAAAATGTAAAGG
AGTCAAACATAAAATCAAGTATTTGGGAAGTGAAGACTGGAAGCTAATTTGCAT
AAATTCACAACTTTTATACTCTTTCTGTATATACATTTTTTTCTTTAAAAACA
ACTATGGATCAGAATAGCCACATTTAGAACACTTTTTGTTATCAGTCAATATTTTT
10 AGATAGTTAGAACCTGGTCCTAAGCCTAAAAGTGGGCTTGATTCTGCAGTAAATC
TTTTACAACCTGCCTCGACACACATAAACCTTTTTTAAAAATAGACACTCC

SEQ ID NO: 61

>gi|2215243|gb|AA487812.1|AA487812 ab11f04.r1 Stratagene lung (#937210) Homo
15 sapiens cDNA clone IMAGE:840511 5' similar to gb:Z19554 VIMENTIN (HUMAN);
CAACGAGAAGGTGGAGCTGCAGGAGCTGAATGACCGCTTCGCCAACTACATCGA
CAAGGTGCGCTTCCTGGAGCAGCAGAATAAGATCCTGCTGGCCGAGCTCGAGCA
GCTCAAGGGCCAAGGCAAGTCGCGCCTGGGGGACCTCTACGAGGAGGAGATGCG
GGACTGCGCCGGCAGTGGACCAGCTAACCAACGACAAAGCCCGCGTCGAGGTGG
20 AGCGCGACAACCTGGCCGAGGACATCATGCGCCTCCGGGAGAAATTGCAGGAGG
AGATGCTTCAGAGAGAGGAAGCCGAAAACACCCTGCAATCTTTCAGACAGGATG
TTGACAATGCG

SEQ ID NO: 62

>gi|23910|emb|Y00757.1|HS7B2 Human mRNA for polypeptide 7B2
25 CGCTCCTCGGGCTGCCCCCTCGGTTGACAATGGTCTCCAGGATGGTCTCTACCATG
CTATCTGGCCTACTGTTTTGGCTGGCATCTGGATGGACTCCAGCATTTGCTTACAG
CCCCCGGACCCCTGACCGGGTCTCAGAAGCAGATATCCAGAGGCTGCTTCATGGT
GTTATGGAGCAATTGGGCATTGCCAGGCCCCGAGTGAATATCCAGCTCACCAG
30 GCCATGAATCTTGTGGGCCCCCAGAGCATTGAAGGTGGAGCTCATGAAGGACTT
CAGCATTTGGGTCTTTTGGCAACATCCCCAACATCGTGGCAGAGTTGACTGGAG
ACAACATTCTTAAGGACTTTAGTGAGGATCAGGGGTACCCAGACCCTCCAAATCC
CTGTCCTGTTGGAAAAACAGATGATGGATGTCTAGAAAAACACCCTGACACTGC
AGAGTTCAGTCGAGAGTTCCAGTTGCACCAAGCATCTCTTTGATCCGGAACATGAC
35 TATCCAGGCTTGGGCAAGTGGAACAAGAACTCCTTTACGAGAAGATGAAGGGA
GGAGAGAGACGAAAGCGGAGGAGTGTCAATCCATATCTACAAGGACAGAGACT
GGATAATGTTGTTGCAAAGAAGTCTGTCCCCCATTTTTTCAGATGAGGATAAGGAT
CCAGAGTAAAGAGAAGATGCTAGACGAAAACCCACATTACCTGTTAGGCCTCAG
CATGGCTTATGTGCACGTGTAAATGGAGTCCCTGTGAATGACAGCATGTTTCTTA
40 CATAGATAATTATGGATACAAAGCAGCTGTATGTAGATAGTGTATTGTCTTCACA
CCGATGATTCTGCTTTTTGCTAAATTAGAATAAGAGCTTTTTTGTTCCTTGGGTTT
TTAAATGTGAATCTGCAATGATCATAAAAATTTAAATGTGAATGTCAACAATA
AAAAGCAAGACTATGAAAGGCTCAGATTTCTTGCAGTTTAAATGGTGTCTGAG
GTTGTAATAATTTGGCCAAGTCTGTAGAAAGCTGTCATTTGATTTTGATTATGTAG
45 TTCATCCAGCCCTTGGGCATTGTTATACACCAGTAAAGAAGGCTGTAAGTCAAGAG
GAGGAGCTGACACATTTCACTTGGCTGCGTCTTAATAAACATGAATGCAAGCATT
GGC

SEQ ID NO: 63

>gi|1321593|gb|L76380.1|HUMCGRPB Homo sapiens (clone HSNME29) CGRP type 1
receptor mRNA, complete cds

GCACGAGGGAACAACCTCTCTCTCTSCAGCAGAGAGTGTACCTCCTGCTTTAGG
5 ACCATCAAGCTCTGCTAACTGAATCTCATCCTAATTGCAGGATCACATTGCAAAG
CTTTCACCTCTTTCCACCTTGCTTGTGGGTAAATCTCTTCTGCGGAATCTCAGAAA
GTAAAGTTCCATCCTGAGAATATTTACAAAGAATTTCTTAAGAGCTGGACTGG
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10 ACCCATACTAGCCTATAGAAAACAATATTTGAATAATAAAAACCCATACTAGCCT
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AAACAAGATTGCTACAACCTTCTAGTTTATGTTATACAGCATATTTCAATTTGGGCTT
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15 TTCTTGTTACAGCAGAATTAGAAGAGAGTCCTGAGGACTCAATTCAGTTGGGAGT
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20 GAAACTGGTTTAGACATCCAGCAAGCAACAGAACATGGACAAATTATACCCAGT
GTAATGTTAACACCCACGAGAAAGTGAAGACTGCACTAAATTTGTTTTACCTGAC
CATAATTGGACACGGATTGTCTATTGCATCACTGCTTATCTCGCTTGGCATATTCT
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25 ACCAGGCCTTAGTAGCCACAAATCCTGTTAGTTGCAAAGTGTCCCAGTTCATTCA
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35 TCTTTAATGGAGAGGTTCAAGCAATTCTGAGAAGAACTGGAATCAATACAAAA
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40 AAGGACTTGGACCCATGACTCTGTAGCCAGAAGACTTCAATATTAAATGACTTGT
GGGAATGTCATAAAGAAGAGCCTTCACATGAAATTAGTAGTGTGTTGATAAGAG
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45 CACACCATTGATGAATTCAAACAAATGGCTGTAAAACTAAACATACATGTTGGG
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5 CCATTTCTACTGTATAAAACAAATTAGCAATCATTTTATATAAAGAAAATCAATGA
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TAAATACTCCATTATTTTATTTTATAGTCTCAAATCAAATACATACAACCTATGTA
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10

SEQ ID NO: 64

>290375H1

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15 TAACCGCTGCTCCAGCCTTCTGGGGGNNTANTCCATTTTTTANNTTCTCTTCTGCC
TGGNGATCTTNGCCGCGTCTGGCCACCATNATGGGNCTCTATGGGGCCATCTT
CCGCCTGGNGCAGGCCAGCGGGCAGAAGNCCCCA

20 SEQ ID NO: 65

>gi|187522|gb|M32304.1|HUMMET Human metalloproteinase inhibitor mRNA, complete
cds

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CGCCCTCCCTCGCGCCCCCGAGACAAAGAGGAGAGAAAGTTTGC CGGCCGA
GCGGGGCAGGTGAGGAGGTGAGCCGCGCGGGAGGGGCCCGCCTCGGCCCCGG
25 CTCAGCCCCCGCCGCGCCCCAGCCCGCCGCGCGAGCAGCGCCCGGACCCCC
CAGCGGCGGCCCCCGCCCGCCAGCCCCCGGCCCGCCATGGGCGCCGCGGCC
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30 ATTTATGGCAACCCTATCAAGAGGATCCAGTATGAGATCAAGCAGATAAAGATG
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35 GCTGCGAGTGCAAGATCACGCGCTGCCCCATGATCCCGTGCTACATCTCCTCCCC
GGACGAGTGCCTCTGGATGGACTGGGTACAGAGAAGAACATCAACGGGCACCA
GGCCAAGTTCTTCGCCTGCATCAAGAGAAGTGACGGCTCCTGTGCGTGGTACCGC
GGCGCGGCGCCCCCAAGCAGGAGTTTCTCGACATCGAGGACCCATAAGCAGGC
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40 CAGCTCTGACATCCCTTCCTGGAAACAGCATGAATAAAACACTCATCCCCGAAT
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SEQ ID NO: 66

>gi|36608|emb|X51416.1|HSSTHOR Human mRNA for steroid hormone receptor hERR1
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GGAAGAGCTTGGGAAGATGCTCAGAAACCACAAAGTGCCTGGTGCAGTGGGAGG
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CGGCCCCCGGCTCACTCCGGCACTCCGGGCGGCTCGGCCCCCATGCCTGCCCGAC
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 5 CGCTGCCTCCCAGGCCACAAGGAAGAGGAGGATGGGGAGGGGGCTGGGCCTGG
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 GGTCTGTGGGGACGTGGCCTCCGGCTACCACTATGGTGTGGCATCCTGTGAGGCC
 TGCAAAGCCTTCTTCAAGAGGACCATCCAGGGGAGCATCGAGTACAGCTGTCCG
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 10 CGCTTCACCAAGTGCCTGCGGGTGGGCATGCTCAAGGAGGGAGTGGCCTGGAC
 CGCGTCCGGGGTGGGCGGCAGAAAGTACAAGCGGCGGCCGGAGGTGGACCCACTG
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 15 GCTACCCTCTGTGACCTCTTTGACCGAGAGATTGTGGTCACCATCAGCTGGGCCA
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 GAGCGTGTGGATGGAGGTGCTGGTGTGGGTGTGGCCAGCGCTCACTGCCACT
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 GGAGGGGGTGTGAGCGGCGGCGGGCGGGCAGGCTGCTGCTACGCTACCGCTC
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 25 GGCAAGGTGCCCATGCACAAGCTGTTCTTGAGATGCTCGAGGCCATGATGGAC
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 TCAGCCCCAAGGGCTGGGGCGGAGCTGGGGTCTGGGCAGTGCACAGCCTGCTGG
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 CCCCTCCTAGGGGGTGTGAGAAGCTGGGAACGTGTGTCCAGGCTCTGGGCACAG
 30 TGCTGCCCCTTGCAAGCCATAACGGTGCCCCCAGAGTGTAGGGGGCCTTGCGGA
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 35 CTCCAAGCAGACTCCAGCCCCTGGACCCCTGGGGTGGCCAGGGCTTCCCCATCAG
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 CAAGCCAGGGCCCAGAGCCCTTGGCTGTACAGAGACTCTATTTTAATGTATATTT
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 40 ATACCGAGCTC

SEQ ID NO: 67

>gi|37089|emb|X70340.1|HSTGFAA H.sapiens mRNA for transforming growth factor alpha
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 TGA CTGCCCAGATTCCCACACTCAGTTCTGCTTCCATGGAACCTGCAGGTTTTTG
 TGCAGGAGGACAAGCCAGCATGTGTCTGCCATTCTGGGTACGTTGGTGCACGCTG
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CACCGCCTTGGTGGTGGTCTCCATCGTGGCCCTGGCTGTCCTTATCATCACATGTG
TGCTGATACTGCTGCCAGGTCCGAAAACACTGTGAGTGGTGCCGGGCCCTCAT
CTGCCGGCACGAGAAGCCCAGCGCCCTCCTGAAGGGAAGAACCGCTTGCTGCCA
CTCAGAAACAGTGGTCTGAAGAGCCCAGAGGAGGAGTTTGGCCAGGTGGACTGT
5 GGCAGATCAATAAAGAAAGGCTTCTTCAGGACAGCACTGCCAGAGATGCCTGGG
TGTGCCACAGACCTTCCTACTTGGCCTGTAATCACCTGTGCAGCCTTTTGTGGGCC
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10 TGTGTGCAGTTGTCTTCTGCCAGCCATGGATTCCAGGCTATATATTTCTTTTAAAT
GGGCCACCTCCCCACAACAGAATTCTGCCCAACACAGGAGATTTCTATAGTTATT
GTTTTCTGTCAATTTGCCTACTGGGGAAGAAAGTGAAGGAGGGGAAACTGTTTAAAT
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15 CGCCACCCTTGGAGATGATGTCTTATTTATTAGATGGATAATGGTTTTATTTTAA
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AGGGATCTGTCCCCTCTGTTGGGGAGAGAGGAAGAGTGTGTGTGTCTACACAGG
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CAGGCCAAATCCATGAAAGGGGGACCAGTCATTTATTTTCCATTTTGTGCTTGG
25 TTGGTTTGTGCTTTATTTTAAAAGGAGAAGTTTAACTTTGCTATTTATTTTCGA
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GCTTTATTAACAAAAACTCTAACAAGTCACCTCCACTATGTGGGTCTTCCTTTCCC
CTCAAGAGAAGGAGCAATTGTTCCCCTGACATCTGGGTCCATCTGACCCATGGGG
CCTGCCTGTGAGAAACAGTGGGTCCCCTCAAATACATAGTGGATAGCTCATCCCT
30 AGGAATTTTCATTAAAATTTGGAAACAGAGTAATGAAGAAATAATATATAAACT
CCTTATGTGAGGAAATGCTACTAATATCTGAAAAGTGAAAGATTTCTATGTATTA
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45 TTATTTGGGGATTTTTCTTCTAGAAATCAAATGACTGATAAGCATTGGCTCCCTCT
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 10 GACCCCTGCCCTCTAGTTGGTTCTGGGCTTTGATCTCTTCCAACCTGCCCAGTCAC
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SEQ ID NO: 68

>1570946T6

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SEQ ID NO: 69

35 >gi|2155852|gb|AA443177.1|AA443177 zx98g10.r1 Soares_NhHMPu_S1 Homo sapiens
 cDNA clone IMAGE:811842 5' similar to SW:SR72_CANFA P33731 SIGNAL
 RECOGNITION PARTICLE 72 KD PROTEIN ;
 CAGATGTGGGATTACTAGCTGTAATTGCAAATAACATCATTACCATTAACAAGGA
 CCAAAATGTCTTTGACTCCAAGAAGAAAGTGAAATTAACCAATGCGGAAGGAGT
 40 AGAGTTTAAGCTTTCCAAGAAACAACTACAAGCTATAGAATTTAACAAGCTTTA
 CTTGCTATGTACACAAACCAGGCTGAACAATGCCGCAAAATATCTGCCAGTTTAC
 AGTCCCAAAGTCCCGAGCATCTCTTACCTGTGTTAATCCAAGCTGCCAGCTCTG
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 45 TCAAGGTAATATTTCTAAAGCATGTCTAATATTGAGAAGCATAGAGGAGTTAAA
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SEQ ID NO: 70

>gi|220076|dbj|D12763.1|HUMST2M Homo sapiens mRNA for ST2 protein

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5 AACAATCATGGGGCCTGGAAAATGAGGCTTTAATTGTAAGATGTCCTAGACAAG
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10 CCAGATTATTTGATGTATTCAACAGTATCTGGATCAGAAAAAAATTCCAAAATTT
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AAAATGGAGCCAATTATAGTGTGACGGCGACCAGGTCCTTCACGGTCAAGGATG
15 AGCAAGGCTTTTCTCTGTTTCCAGTAATCGGAGCCCTGCACAAAATGAAATAAA
GGAAGTGGAATTGGAAAAAACGCAACCTAACTTGCTCTGCTTGTTTTGGAAA
AGGCACTCAGTTCTTGCTGCGCTCTGTGGCAGCTTAATGGAACAAAAATTACA
GACTTTGGTGAACCAAGAATTCAACAAGAGGAAGGGCAAAATCAAAGTTTCAGC
AATGGGCTGGCTTGTCTAGACATGGTTTTAAGAATAGCTGACGTGAAGGAAGAG
20 GATTTATTGCTGCAGTACGACTGTCTGGCCCTGAATTTGCATGGCTTGAGAAGGC
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ATCACCTGAACCTTTCTCTAGCAAGTGTAAAGCAGAATGGAGTGTGGTTCCAAGAGA
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25 CTGCTTAAATTGTTTCGTCTCTCCCCACTCCCTCCTATCGTTGGTTTGTCTAGAACA
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SEQ ID NO: 71

>gi|180670|gb|J03210.1|HUMCN4GEL Human collagenase type IV mRNA, 3' end
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35 TTGACCAGAATACCATCGAGACCATGCGGAAGCCACGCTGCGGCAACCCAGATG
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CATAACAGGATCATCGGCTACACACCTGATCTGGACCCAGAGACAGTGGATGATG
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40 GATGGATACCCCTTTGACGGTAAGGACGGACTCCTGGCTCATGCCTTCGCCCCAG
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5 AGGATGACATCAAGGGCATTGAGGAGCTCTATGGGGCCTCTCCTGACATTGACCT
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10 CCCACAGGAGGAGAAGGCTGTGTTCTTTGCAGGGAATGAATACTGGATCTACTC
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20 AATTTAAGATTCAGAGAGTGGCTCCTCCCGGTGCCCAAGAATAGATGCTGACTG
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30 GGAAAACCAAGCCGTGGCTTCCCGCTCAGCCCTCCCTGCCCTCCCTTCAACCAT
TCCCCATGGGAAATGTCAACAAGTATGAATAAAGACACCTACTGAGTGGC

SEQ ID NO: 72

>gi|34411|emb|X52941.1|HSE LTFR Human LTF mRNA for lactoferrin (lactotransferrin)

35 CTGTGTCTTCTCGTCTGCTGTTTCTCGGGGCCCTCGGACTGTGTCTGGCTGGCCG
TAGGAGAAGGAGTGTTCAGTGGTGCGCCGTATCCCAACCCGAGGCCACAAAATG
CTTCCAATGGCAAAGGAATATGAGAAAAGTGCCTGGCCCTCCTGTGAGCTGCAT
AAAGAGAGACTCCCCCATCCAGTGTATCCAGGCCATTGCGGAAAACAGGGCCGA
TGCTGTGACCCTTGATGGTGGTTTCATATACGAGGCAGGCCTGGCCCCCTACAAA
40 CTGCGACCTGTAGCGGCGGAAGTCTACGGGACCGAAAGACAGCCACGAACTCAC
TATTATGCCGTGGCTGTGGTGAAGAAGGGCGGCAGCTTTCAGCTGAACGAACTG
CAAGGTCTGAAGTCCTGCCACACAGGCCTTCGCAGGACCGCTGGATGGAATGTC
CCTATAGGGACACTTCGTCCATTCTTGAATTGGACGGGTCCACCTGAGCCCATTG
AGGCAGCTGTGGCCAGGTTCTTCTCAGCCAGCTGTGTTCCCGGTGCAGATAAAGG
45 ACAGTTCCCCAACCTGTGTGCGCTGTGTGCGGGGACAGGGGAAAACAAATGTGC
CTTCTCCTCCAGGAACCGTACTTCAGCTACTCTGGTGCCTTCAAGTGTCTGAGA
GACGGGGCTGGAGACGTGGCTTTTATCAGAGAGAGCACAGTGTGTTGAGGACCTG
TCAGACGAGGCTGAAAGGGACGAGTATGAGTTACTCTGCCAGACAACACTCGG
AAGCCAGTGGACAAGTTCAAAGACTGCCATCTGGCCCGGGTCCCTTCTCATGCCG

TTGTGGCACGAAGTGTGAATGGCAAGGAGGATGCCATCTGGAATCTTCTCCGCCA
GGCACAGGAAAAGTTTGGAAAGGACAAGTCACCGAAATTCCAGCTCTTTGGCTC
CCCTAGTGGGCAGAAAGATCTGCTGTTCAAGGACTCTGCCATTGGGTTTTCGAGG
GTGCCCCCGAGGATAGATTCTGGGCTGTACCTTGGCTCCGGCTACTTCACTGCCA
5 TCCAGAACTTGAGGAAAAGTGAGGAGGAAGTGGCTGCCCGGCGTGCGCGGGTCTG
TGTGGTGTGCGGTGGGCGAGCAGGAGCTGCGCAAGTGTAACCAAGTGGAGTGGCT
TGAGCGAAGGCAGCGTGACCTGCTCCTCGGCCTCCACCACAGAGGACTGCATCG
CCCTGGTGTGTAAGGAGAAGCTGATGCCATGAGTTTGGATGGAGGATATGTGT
ACACTGCAGGCAAATGTGGTTTGGTGCCTGTCTGGCAGAGAACTACAAATCCCA
10 ACAAAGCAGTGACCCTGATCCTAACTGTGTGGATAGACCTGTGGAAGGATATCTT
GCTGTGGCGGTGGTTAGGAGATCAGACACTAGCCTTACCTGGAAGTCTGTGAAA
GGCAAGAAGTCCTGCCACACCGCCGTGGACAGGACTGCAGGCTGGAATATCCCC
ATGGGCCTGCTCTTCAACCAGACGGGCTCCTGCAAATTTGATGAATATTTTCAGTC
AAAGCTGTGCCCCCTGGGTCTGACCCGAGATCTAATCTCTGTGCTCTGTGTATTGG
15 CGACGAGCAGGGTGAGAATAAGTGCGTGCCCAACAGCAACGAGAGATACTACG
GCTACACTGGGGCTTTCCGGTGCCTGGCTGAGAATGCTGGAGACGTTGCATTTGT
GAAAGATGTCACTGTCTTGCAGAACACTGATGGAAATAACAATGAGGCATGGGC
TAAGGATTTGAAGCTGGCAGACTTTGCGCTGCTGTGCCTCGATGGCAAACGGAA
GCCTGTGACTGAGGCTAGAAGCTGCCATCTTGCCATGGCCCCGAATCATGCCGTG
20 GTGTCTCGGATGGATAAGGTGGAACGCCTGAAACAGGTGTTGCTCCACCAACAG
GCTAAATTTGGGAGAAATGGATCTGACTGCCCGGACAAGTTTTGCTTATTCCAGT
CTGAAACCAAAAACCTTCTGTTCAATGACAACACTGAGTGTCTGGCCAGACTCCA
TGGCAAAACAACATATGAAAAATATTTGGGACCACAGTATGTCGCAGGCATTAC
TAATCTGAAAAAGTGCTCAACCTCCCCCTCCTGGAAGCCTGTGAATTCCTCAGG
25 AAGTAAAACCGAAGAAGATGGCCCAGCTCCCCAAGAAAGCCTCAGCCATTCACT
GCCCCAGCTCTTCTCCCCAGGTGTGTTGGGGCCTTGGCTCCCCTGCTGAAGGTG
GGGATTGCCCATCCATCTGCTTACAATTCCTGCTGTCGTCTTAGCAAGAAGTAA
AATGAGAAATTTTGTGATATTC

30 SEQ ID NO: 73

>gi|36109|emb|X70040.1|HSRON H.sapiens RON mRNA for tyrosine kinase

GGATCCTCTAGGGTCCCAGCTCGCCTCGATGGAGCTCCTCCC GCCGCTGCCTCAG
TCCTTCCTGTTGCTGCTGCTGTTGCCTGCCAAGCCCCGCGCGGGCGAGGACTGGC
AGTGCCCCGCGCACCCCTACGCGGCCTCTCGCGACTTTGACGTGAAGTACGTGGT
35 GCCCAGCTTCTCCGCCGAGGCCTGGTACAGGCCATGGTGACCTACGAGGGCGA
CAGAAATGAGAGTGCTGTGTTGTAGCCATACGCAATCGCCTGCATGTGCTTGGG
CCTGACCTGAAGTCTGTCCAGAGCCTGGCCACGGGCCCTGCTGGAGACCCTGGCT
GCCAGACGTGTGCAGCCTGTGGCCCAGGACCCACGGCCCTCCCGGTGACACAG
ACACAAAGGTGCTGGTGCTGGATCCCGCGCTGCCTGCGCTGGTCAGTTGTGGCTC
40 CAGCCTGCAGGGCCGCTGCTTCCTGCATGACCTAGAGCCCCAAGGGACAGCCGT
GCATCTGGCAGCGCCAGCCTGCCTCTTCTCAGCCCACCATAACCGGCCCGATGAC
TGCCCCGACTGTGTGGCCAGCCATTGGGCACCCGTGTAAGTGTGGTTGAGCAAG
GCCAGGCCTCCTATTTCTACGTGGCATCCTCACTGGACGCAGCCGTGGCTGGCAG
CTTCAGCCCACGCTCAGTGTCTATCAGGCGTCTCAAGGCTGACGCCTCGGGATT
45 GCACCGGGCTTTGTGGCGTTGTGAGTGCTGCCCAAGCATCTTGTCTCCTACAGTA
TTGAATACGTGCACAGCTTCCACACGGGAGCCTTCGTATACTTCCTGACTGTACA
GCCGGCCAGCGTGACAGATGATCCTAGTGCCCTGCACACAGCCTGGCACGGCTT
AGCGCCACTGAGCCAGAGTTGGGTGACTATCGGGAGCTGGTCCTCGACTGCAGA
TTTGCTCCAAAACGCAGGCGCCGGGGGGCCCCAGAAGGCGGACAGCCCTACCT

GTGCTGCAGGTGGCCCACTCCGCTCCAGTGGGTGCCCAACTTGCCACTGAGCTGA
GCATCGCCGAGGGCCAGGAAGTACTATTTGGGGTCTTTGTGACTGGCAAGGATG
GTGGTCCTGGCGTGGGCCCCAACTCTGTGCTGTGTCCTTCCCCATTGACCTGCTG
GACACACTAATTGATGAGGGTGTGGAGCGCTGTTGTGAATCCCCAGTCCATCCAG
5 GCCTCCGGCGAGGCCTCGACTTCTTCCAGTCGCCCAGTTTTTGGCCCAACCCGCCT
GGCCTGGAAGCCCTCAGCCCCAACACCAGCTGCCGCCACTTCCCTCTGCTGGTCA
GTAGCAGCTTCTCACGTGTGGACCTATTCAATGGGCTGTTGGGACCAGTACAGGT
CACTGCATTGTATGTGACACGCCTTGACAACGTCACAGTGGCACACATGGGCACA
ATGGATGGGCGTATCCTGCAGGTGGAGCTGGTCAGGTCACTAAACTACTTGCTGT
10 ATGTGTCCAACCTTCTCACTGGGTGACAGTGGGCAGCCCGTGCAGCGGGATGTCAG
TCGTCTTGGGGACCACCTACTCTTTGCCTCTGGGGACCAGGTTTTCCAGGTACCTA
TCCGAGGCCCTGGCTGCCGCCACTTCCCTGACCTGTGGGCGTTGCCTAAGGGCATG
GCATTTTCATGGGCTGTGGCTGGTGTGGGAACATGTGCGGCCAGCAGAAGGAGTG
TCCTGGCTCCTGGCAACAGGACCACTGCCACCTAAGCTTACTGAGTTCCACCCC
15 CACAGTGGACCTCTAAGGGGCAGTACAAGGCTGACCCTGTGTGGCTCCAACCTTCT
ACCTTCACCTTCTGGTCTGGTGCCTGAGGGAACCCATCAGGTCACTGTGGGCCA
AAGTCCCTGCCGGCCACTGCCCAAGGACAGCTCAAACTCAGACCAGTGCCCCG
GAAAGACTTTGTAGAGGAGTTTGAGTGTGAACTGGAGCCCTTGGGCACCCAGGC
AGTGGGGCCTACCAACGTCAGCCTCACCGTGAATAACATGCCACCGGGCAAGCA
20 CTTCCGGGTAGACGGCACCTCCGTGCTGAGAGGCTTCTCTTTCATGGAGCCAGTG
CTGATAGCAGTGCAACCCCTCTTTGGCCACGGGCAGGAGGCACCTGTCTCACTC
TTGAAGGCCAGAGTCTGTCTGTAGGCACCAGCCGGGCTGTGCTGGTCAATGGGA
CTGAGTGTCTGCTAGCACGGGTCAGTGAGGGGCAGCTTTTATGTGCCACACCCCC
TGGGGCCACGGTGGCCAGTGTCCCCCTTAGCCTGCAGGTGGGGGGTGGCCAGGT
25 ACCTGGTTCTTGACCTTCCAGTACAGAGAAGACCCTGTCGTGCTAAGCATCAGC
CCCAACTGTGGCTACATCAACTCCCACATCACCATCTGTGGCCAGCATCTAACTT
CAGCATGGCACTTAGTGCTGTCAATCCATGACGGGCTTAGGGCAGTGGAAGCA
GGTGTGAGAGGCAGCTTCCAGAGCAGCAGCTGTGCCGCCTTCCCTGAATATGTGGT
CCGAGACCCCCAGGGATGGGTGGCAGGGAATCTGAGTGCCCCGAGGGGATGGAGC
30 TGCTGGCTTTACACTGCCTGGCTTTCGCTTCCCTACCCCCACCCCATCCACCCAGTG
CCAACCTAGTTCCACTGAAGCCTGAGGAGCATGCCATTAAGTTTGAGTATATTGG
GCTGGGCGCTGTGGCTGACTGTGTGGGTATCAACGTGACCGTGGGTGGTGAGAG
CTGCCAGCACGAGTTCCGGGGGGACATGGTTGTCTGCCCCCTGCCCCCATCCCTG
CAGCTTGGCCAGGATGGTGCCCCATTGCAGGTCTGCGTAGATGGTGAATGTCATA
35 TCCTGGGTAGAGTGGTGCGGCCAGGGCCAGATGGGGTCCCACAGAGCACGCTCC
TTGGTATCCTGCTGCCTTTGCTGCTGCTTGTGGCTGCACTGGCGACTGCACTGGTC
TTCAGCTACTGGTGGCGGAGGAAGCAGCTAGTTCTTCCCTCCCAACCTGAATGACC
TGGCATCCCTGGACCAGACTGCTGGAGCCACACCCCTGCCTATTCTGTACTCGGG
CTCTGACTACAGAAAGTGGCCTTGCACTCCCTGCCATTGATGGTCTGGATTCCACC
40 ACTTGTGTCCATGGAGCATCCTTCTCCGATAGTGAAGATGAATCCTGTGTGCCAC
TGCTGCGGAAAGAGTCCATCCAGCTAAGGGACCTGGACTCTGCGCTCTTGGCTGA
GGTCAAGGATGTGCTGATTCCCCATGAGCGGGTGGTCACCCACAGTGACCGAGT
CATTGGCAAAGGCCACTTTGGAGTTGTCTACCACGGAGAATACATAGACCAGGC
CCAGAATCGAATCCAATGTGCCATCAAGTCACTAAGTCGCATCACAGAGATGCA
45 GCAGGTGGAGGCCTTCCCTGCGAGAGGGGCTGCTCATGCGTGGCCTGAACCACCC
GAATGTGCTGGCTCTCATTGGTATCATGTTGCCACCTGAGGGCCTGCCCCATGTG
CTGCTGCCCTATATGTGCCACGGTGACCTGCTCCAGTTTCATCCGCTCACCTCAGC
GGAACCCACCGTGAAGGACCTCATCAGCTTTGGCCTGCAGGTAGCCCGCGGCA
TGGAGTACCTGGCAGAGCAGAAGTTTGTGCACAGGGACCTGGCTGCGCGGAACCT

GCATGCTGGACGAGTCATTACAGTCAAGGTGGCTGACTTTGGTTTGGCCCGCGA
CATCCTGGACAGGGAGTACTATAGTGTTCAACAGCATCGCCACGCTCGCTACCT
GTGAAGTGGATGGCGCTGGAGAGCCTGCAGACCTATAGATTTACCACCAAGTCT
GATGTGTGGTCATTTGGTGTGCTGCTGTGGGAACTGCTGACACGGGGTGCCCCAC
5 CATAACGCCACATTGACCCTTTTGACCTTACCCACTTCCTGGCCCAGGGTTCGGCG
CCTGCCCCAGCCTGAGTATTGCCCTGATTCTCTGTACCAAGTGATGCAGCAATGC
TGGGAGGCAGACCCAGCAGTGCGACCCACCTTCAGAGTACTAGTGGGGGAGGTG
GAGCAGATAGTGTCTGCACTGCTTGGGGACCATTATGTGCAGCTGCCAGCAACCT
ACATGAACTTGGGCCCCAGCACCTCGCATGAGATGAATGTGCGTCCAGAACAGC
10 CGCAGTTCTCACCCATGCCAGGGAATGTACGCCGGCCCCGGCCACTCTCAGAGCC
TCCTCGGCCCACTTGACTTAGTTCTTGGGCTGGACCTGCTTAGCTGCCTTGAGCTA
ACCCCAAGGCTGCCTCTGGGCCATGCCAGGCCAGAGCAGTGGCCCTCCACCTTGT
TCCTGCCCTTTAACTTTTCAAGAGGCAATAGGTAAATGGGCCCATTAGGTCCCTCAC
TCCACAGAGTGAGCCAGTGAGGGCAGTCCTGCAACATGTATTTATGGAGTGCCTG
15 CTGTGGACCCTGTCTTCTGGGCACAGTGGACTCAGCAGTGACCACACCAACACTG
ACCCTTGAACCAATAAAGGAACAAATGACTATTAAAGCACAAAAAAAAA

SEQ ID NO: 74

>gi|180020|gb|M86511.1|HUMCD14MCA Human monocyte antigen CD14 (CD14) mRNA,
complete cds
20 GCCGCTGTGTAGGAAAGAAGCTAAAGCACTTCCAGAGCCTGTCCGGAGCTCAGA
GGTTCGGAAGACTTATCGACCATGGAGCGCGCGTCTGCTTGTGCTGCTGCTGC
TGCCGCTGGTGCACGTCTCTGCGACCACGCCAGAACCTTGTGAGCTGGACGATGA
AGATTTCCGCTGCGTCTGCAACTTCTCCGAACCTCAGCCCGACTGGTCCGAAGCC
25 TTCCAGTGTGTGTCTGCAGTAGAGGTGGAGATCCATGCCGGCGGTCTCAACCTAG
AGCCGTTTCTAAAGCGCGTCGATGCGGACGCCGACCCGCGGCAGTATGCTGACA
CGGTCAAGGCTCTCCGCGTGCGGCGGCTCACAGTGGGAGCCGCACAGGTTCTTG
CTCAGCTACTGGTAGGCGCCCTGCGTGTGCTAGCGTACTCCCGCCTCAAGGAACT
GACGCTCGAGGACCTAAAGATAACCGGCACCATGCCTCCGCTGCCTCTGGAAGC
30 CACAGGACTTGCACTTTCCAGCTTGCGCCTACGCAACGTGTGCTGGGCGACAGGG
CGTTCTTGGCTCGCCGAGCTGCAGCAGTGGCTCAAGCCAGGCCTCAAGGTACTGA
GCATTGCCCAAGCACACTCGCCTGCCTTTTCTGCGAACAGGTTGCGGCCTTCCC
GGCCCTTACCAGCCTAGACCTGTCTGACAATCCTGGACTGGGCGAACGCGGACTG
ATGGCGGCTCTCTGTCCCCACAAGTTCCCGGCCATCCAGAATCTAGCGCTGCGCA
35 ACACAGGAATGGAGACGCCACAGGCGTGTGCGCCGCACTGGCGGCGGCAGGTG
TGCAGCCCCACAGCCTAGACCTCAGCCACAACCTCGCTGCGCGCCACCGTAAACCC
TAGCGCTCCGAGATGCATGTGGTCCAGCGCCCTGAACTCCCTCAATCTGTCGTTT
GCTGGGCTGGAACAGGTGCCTAAAGGACTGCCAGCCAAGCTCAGAGTGCTCGAT
CTCAGCTGCAACAGACTGAACAGGGCGCCGACGCTGACGAGCTGCCCAGGTG
40 GATAACCTGACACTGGACGGGAATCCCTTCCTGGTCCCTGGAACCTGCCCTCCCCC
ACGAGGGCTCAATGAACTCCGGCGTGGTCCCAGCCTGTGCACGTTGACCCTGTC
GGTGGGGGTGTCGGGAACCCCTGGTGTGCTCCAAGGGGGCCGGGGCTTTGCCTA
AGATCCAAGACAGAATAATGAATGGACTCAAACCTGCCTTGGCTTCAGGGGAGTC
CCGTCAGGACGTTGAGGACTTTTCGACCAATTCAACCCTTTGCCCCACCTTTATTA
45 AAATCTTAAACAACG

SEQ ID NO: 75

>gi|1118663|gb|H97778.1|H97778 yw02b02.s1 Soares melanocyte 2NbHM Homo sapiens
cDNA clone IMAGE:251019 3' similar to gb:Z13009_ma1 EPITHELIAL-CADHERIN
PRECURSOR (HUMAN);contains Alu repetitive element;

5 CGTTTAACAAAATTGTTTAATAAAATTTATAAAAATGCATCTTTGAGAATACTTTT
CTCAGCTTGAATTGTTTTCTTTCCACCCCCAAAGAAAATACACAATTATCAGC
ACCCACACATGTATACTCAAACTACAGTGACATTCTCTACACAGAACTATAT
TCGATATAGCTTGAAGTGCCGAAAAATCAAGACAATTCCAAAAAGTGATTGCAG
GGTTGATTTTTTTCTCCAAAACACTTTGAGAAACACGTAAAGCTATTTCAACAAA
10 AGTCTTTTCTTTGATTGTCAAAAGTTGAAATTACATTTAAATAAAAAGAGATCC
AAATCAAGATCCTCACTNACCCCCTACCCCTCAACTGAACCCCCTTTTAGGGCCA
CATTTTCTTCTTGCTCCTAAGAAAAAAATTTGGAATTTTGAATATTCTCGGTTTTT
T

15 SEQ ID NO: 76

>gi|452649|emb|X76180.1|HSLASNA H.sapiens mRNA for lung amiloride sensitive Na+
channel protein

CCGGCCAGCGGGCGGGCTCCCCAGCCAGGCCGCTGCACCTGTCAGGGGAACAAG
CTGGAGGAGCAGGACCCTAGACCTCTGCAGCCCATACCAGGTCTCATGGAGGGG
20 AACAAGCTGGAGGAGCAGGACTCTAGCCCTCCACAGTCCACTCCAGGGCTCATG
AAGGGGAACAAGCGTGAGGAGCAGGGGCTGGGCCCCGAACCTGCGGCGCCCCA
GCAGCCCACGGCGGAGGAGGAGGCCCTGATCGAGTTCCACCGCTCCTACCGAGA
GCTCTTCGAGTTCTTCTGCAACAACACCACCATCCACGGCGCCATCCGCCTGGTG
TGCTCCCAGCACAAACCGCATGAAGACGGCCTTCTGGGCAGTGCTGTGGCTCTGCA
25 CCTTTGGCATGATGTACTGGCAATTCGGCCTGCTTTTCGGAGAGTACTTCAGCTA
CCCCGTCAGCCTCAACATCAACCTCAACTCGGACAAGCTCGTCTTCCCCGCAGTG
ACCATCTGCACCCTCAATCCCTACAGGTACCCGGAAATTAAAGAGGAGCTGGAG
GAGCTGGACCGCATCACAGAGCAGACGCTCTTTGACCTGTACAAATACAGCTCCT
TCACCACTCTCGTGGCCGGCTCCCGCAGCCGTCGCGACCTGCGGGGGGACTCTGCC
30 GCACCCCTTGCAAGCGCCTGAGGGTCCCGCCCCCGCCTCACGGGGGGCGTCGAGCC
CGTAGCGTGGCCTCCAGCTTGCGGGACAACAACCCCCAGGTGGACTGGAAGGAC
TGGAAGATCGGCTTCCAGCTGTGCAACCAGAACAATCGGACTGCTTCTACCAG
ACATACTCATCAGGGGTGGATGCGGTGAGGGAGTGGTACCGCTTCCACTACATC
AACATCCTGTGAGGGCTGCCAGAGACTCTGCCATCCCTGGAGGGAGGACACCGCTG
35 GGCAACTTCATCTTCGCCTGCCGCTTCAACCAGGTCTCCTGCAACCAGGCGAATT
ACTCTCACTTCCACCACCCGATGTATGGAACTGCTATACTTTCAATGACAAGAA
CAACTCCAACCTCTGGATGTCTTCCATGCCTGGAATCAACAACGGTCTGTCCCTG
ATGCTGCGCGCAGAGCAGAATGACTTCATTCCCCTGCTGTCCACAGTGACTGGGG
CCCGGGTAATGGTGCACGGGCAGGATGAACCTGCCTTTATGGATGATGGTGGCTT
40 TAACTTGCGGCCTGGCGTGGAGACCTCCATCAGCATGAGGAAGGAAACCCTGGA
CAGACTTGGGGGCGATTATGGCGACTGCACCAAGAATGGCAGTGATGTTCTGTT
GAGAACCCTTACCCTTCAAAGTACACACAGCAGGTGTGTATTCACTCCTGCTTCC
AGGAGAGCATGATCAAGGAGTGTGGCTGTGCCTACATCTTCTATCCGCGGCCCCA
GAACGTGGAGTACTGTGACTACAGAAAGCACAGTTCTTGGGGGTACTGCTACTA
45 TAAGCTCCAGGTTGACTTCTCCTCAGACCACCTGGGCTGTTTACCAAGTGCCGG
AAGCCATGCAGCGTGACCAGCTACCAGCTCTCTGCTGGTTACTCACGATGGCCCT
CGGTGACATCCCAGGAATGGGTCTTCCAGATGCTATCGCGACAGAACAATTACA
CCGTCAACAACAAGAGAAATGGAGTGGCCAAAGTCAACATCTTCTTCAAGGAGC
TGAACTACAAAACCAATTCTGAGTCTCCCTCTGTACAGATGGTCACCCCTCCTGTC

CAACCTGGGCAGCCAGTGGAGCCTGTGGTTCGGCTCCTCGGTGTTGTCTGTGGTG
GAGATGGCTGAGCTCGTCTTTGACCTGCTGGTCATCATGTTCTCATGCTGCTCCG
AAGGTTCCGAAGCCGATACTGGTCTCCAGGCCGAGGGGGCAGGGGTGCTCAGGA
GGTAGCCTCCACCCTGGCATCCTCCCCTCCTTCCCACTTCTGCCCCACCCCATGT
5 CTCTGTCTTGTCCCAGCCAGGCCCTGCTCCCTCTCCAGCCTTGACAGCCCCTCCC
CCTGCCTATGCCACCCTGGGCCCCCGCCCATCTCCAGGGGGCTCTGCAGGGGGCCA
GTTCTCCACCTGTCTCTGGGGGGGGCCCTGAGAGGGAAGGAGAGGTTTCTCACA
CCAAGGCAGATGCTCCTCTGGTGGGAGGGTGTGGCCCTGGCAAGATTGAAGGA
TGTGCAGGGCTTCTCTCAGAGCCGCCAAACTGCCGTTGATGTGTGGAGGGGAA
10 GCAAGATGGGTAAGGGCTCAGGAAGTTGCTCCAAGAACAGTAGCTGATGAAGCT
GCCCAGAAGTGCCTTGGCTCCAGCCCTGTACCCCTTGGTACTGCCTCTGAACACT
CTGGTTTCCCCACCCAACTGCGGCTAAGTCTCTTTTTCCCTTGGATCAGCCAAGCG
AAACTTGGAGCTTTGACAAGGAACTTTCCTAAGAAACCGCTGATAACCAGGACA
AAACACAACCAAGGGTACACGCAGGCATGCACGGGTTTCCTGCCCAGCGACGGC
15 TTAAGCCAGCCCCGACTGGCCTGGCCACACTGCTCTCCAGTAGCACAGATGTCT
GCTCCTCCTCTTGAACCTTGGGTGGGAAACCCACCCAAAAGCCCCCTTTGTTACT
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AGTAAAGGCAGACCCAGGGCTCCTCTAGCCTCATAACCGTGCCCTCACAGAGCC
ATGCCCCGGCACCTCTGCCCTGTGTCTTTCATACCTCTACATGTCTGCTTGAGATA
20 TTTCTCAGCCTGAAAGTTTCCCCAACCATCTGCCAGAGAACTCCTATGCATCCCT
TAGAACCTGCTCAGACACCATTACTTTTGTGAACGCTTCTGCCACATCTTGTCTT
CCCCAAAATTGATCACTCCGCCTTCTCCTGGGCTCCCGTAGCACACTATAACATC
TGCTGGAGTGTGTGCTGTTGCACCATACTTCTTGTACATTTGTGTCTCCCTTCCCA
ACTAGACTGTAAGTGCCTTGGCGTCAGGGACTGAATCTTGCCCGTTTATGTATGC
25 TCCATGTCTAGCCCATCATCCTGCTTGGAGCAAGTAGGCAGGAGCTCAATAAATG
TTTGTTCATGAAAAAAAAAAAAAAAAAAAA

SEQ ID NO: 77

>gi|189537|gb|M80436.1|HUMPAFR Human platelet activating factor receptor mRNA,
complete cds
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AGCAGGTTTGTGGAATGCCGGATCGCTCAACGGCCTGACGTGGGCAAAAACCTC
GCCTTCCGCACCCATCATTATATTGATGCTCATTGCCGCCGCCTTACTGGTACGCC
GGATGCGCTTGCTGGAAATGGGACACACGGTCACTGCAGCTGAAGCCGCTGCCC
35 CTGCTACAGGCACCACCAGGACCAGCTGATCATTCCAGCCCACAGCAATGGAGC
CACATGACTCCTCCCACATGGACTCTGAGTTCCGATACACTCTCTTCCCGATTGTT
TACAGCATCATCTTTGTGCTCGGGGTCATTGCTAATGGCTACGTGCTGTGGGTCTT
TGCCCGCCTGTACCCTTGCAAGAAATTCAATGAGATAAAGATCTTCATGGTGAAC
CTCACCATGGCGGACATGCTCTTCTTGATCACCTGCCACTTGGATTGTCTACTA
40 CCAAACCAGGGCAACTGGATACTCCCCAAATTCCTGTGCAACGTGGCTGGCTGC
CTTTCTTCATCAACACCTACTGCTCTGTGGCCTTCTGGGCGTCATCACTTATAA
CCGCTTCAGGCAGTAACTCGGCCCATCAAGACTGCTCAGGCCAACACCCGCAA
GCGTGGCATCTCTTTGTCTTGGTCATCTGGGTGGCCATTGTGGGAGCTGCATCCT
ACTTCCTCATCCTGGACTCCACCAACACAGTGCCCGACAGTGCTGGCTCAGGCAA
45 CGTCACTCGCTGCTTTGAGCATTACGAGAAGGGCAGCGTGCCAGTCCTCATCATC
CACATCTTCATCGTGTTAGCTTCTTCTGGTCTTCTCATCATCCTCTTCTGCAAC
CTGGTCATCATCCGTACCTTGCTCATGCAGCCGGTGACGAGCAGCGCAACGCTG
AAGTCAAGCGCCGGGCGCTGTGGATGGTGTGCACGGTCTTGGCGGTGTTTCATCAT
CTGCTTCGTGCCCCACCACGTGGTGCAGCTGCCCTGGACCCTTGCTGAGCTGGGC

TTCCAGGACAGCAAATTCCACCAGGCCATTAATGATGCACATCAGGTCACCCTCT
GCCTCCTTAGCACCAACTGTGTCTTAGACCCTGTTATCTACTGTTTCCTCACCAAG
AAGTTCCGCAAGCACCTCACCGAAAAGTTCTACAGCATGCGCAGTAGCCGAAA
TGCTCCCGGGCCACCACGGATACGGTCACTGAAGTGGTTGTGCCATTCAACCAGA
5 TCCCTGGCAATTCCCTCAAAAATTAGTCCCTGCTTCCAGGCCTGAAGTCTTCTCCT
CCATGAACATCATGGACTGAGCTGGGGGAAGAAGGGATATCTACTGTGGTCTGG
GCACCACCTCTGTGGGCACTGGTGGGGCATTAGATTTGGAGGCTACCTCACCTGG
GCAGGGATGATGGCAGAGCCAGGCTGTTGGAAAATCCAGAACTCAAATGAGCCC
CTTCATCCGCCTGTGGGGCATACTACAGTAACTGTGACTTGATGACTTTATCTGA
10 GTCCTTAT

SEQ ID NO: 78

>gi|1835924|gb|S82666.1|S82666 Homo sapiens serine protease-like protein mRNA,
complete cds

15 ACCAGCGGCAGACCACAGGCAGGGCAGAGGCACGTCTGGGTCCCCCTCCCTCCTT
CCTATCGGCGACTCCCAGATCCTGGCCATGAGAGCTCCGCACCTCCACCTCTCCG
CCGCCTCTGGCGCCCCGGGCTCTGGCGAAGCTGCTGCCGCTGCTGATGGCGCAACT
CTGGGGCCGCAGAGGCGGCGCTGCTCCCCCAAACGACACGCGCTTGGACCCCGA
AGCCTATGGCGCCCCGTGCGCGCGCGGCTCGCAGCCCTGGCAGGTCTCGCTCTTC
20 AACGGCCTCTCGTTCCACTGCGCGGGTGTCTGGTGGACCAGAGTTGGGTGCTGA
CGGCCGCGCACTGCGGAAACAAGCCACTGTGGGCTCGAGTAGGGGATGATCACC
TGCTGCTTCTTCAGGGCGAGCAGCTCCGCCGGACGACTCGCTCTGTTGTCCATCC
CAAGTACCACCAGGGCTCAGGCCCCATCCTGCCAAGGCGAACGGATGAGCACGA
TCTCATGTTGCTAAAGCTGGCCAGGCCCCGTAGTGCCGGGGCCCCCGCGTCCGGGCC
25 CTGCAGCTTCCCTACCGCTGTGCTCAGCCCCGAGACCAGTGCCAGGTTGCTGGCT
GGGGCACCACGGCCGCCCGGAGAGTGAAGTACAACAAGGGCCTGACCTGCTCCA
GCATCACTATCCTGAGCCCTAAAGAGTGTGAGGTCTTCTACCCTGGCGTGGTCAC
CAACAACATGATATGTGCTGGACTGGACCGGGGCCAGGACCCTTGCCAGAGTGA
CTCTGGAGGGCCCCCTGGTCTGTGACGAGACCCTCCAAGGCATCCTCTCGTGGGGT
30 GTTTACCCCTGTGGCTCTGCCCAGCATCCAGCTGTCTACACCCAGATCTGCAAAT
ACATGTCCTGGATCAATAAAGTCATAGCTCCAAGTATCCAGATGCTACGCTCCA
GCTGATCCAGATGTTATGCTCCTGCTGATCCAGATGCCAGAGGCTCCATCGTCC
ATCCTCTTCTCCCCAGTCGGCTGAACTCTCCCCTTGTCTGCACTGTTCAAACCTC
TGCCGCCCTCCACACCTCTAAACATCTCCCCTCTCACCTCATTCCCCCACCTATCC
35 CCATTCTCTGCCTGTACTGAAGCTGAAATGCAGGAAGTGGTGGCAAAGGTTTATT
CCAGAGAAGCCAGGAAGCCGGTCATCACCCAGCCTCTGAGAGCAGTTACTGGGG
TCACCCAACCTGACTTCCTCTGCCACTCCCCGCTGTGTGACTTTGGGCAAGCCAA
GTGCCCTCTCTGAACCTCAGTTTCTCATCTGCAAAATGGGAACAATGACGTGCC
TACCTCTTAGACATGTTGTGAGGAGACTATGATATAACATGTGTATGTAAATCTT
40 CATGTGATTGTCATGTAAGGCTTAACACAGTGGGTGGTGAGTTCTGACTAAAGGT
TACCTGTTGTCTGTGAAAAAAAAAAAAAAAAAAAAA

SEQ ID NO: 79

>gi|1859520|gb|AA234897.1|AA234897 zs36c04.s1 Soares_NhHMPu_S1 Homo sapiens
cDNA clone IMAGE:687270 3'

45 ACTCTGCTTACATTTTATAAGTTTAAAGGTCAGCTGTCAAAAGGATAACCTGTGGG
GTTAGAACATATCACATTGCAACACCCTAAATTGTTTTTAATACATTAGCAATCT
ATTGGGTCAACTGACATCCATTGTATATACTAGTTTCTTTTCATGCTATTTTTATTTT
GTTTTTGCATTTTTATCAAATGCAGGGCCCCCTTCTGATCTCACCATTTCACCAT

GCATCTTGAATTTCAGTAAGTGCATATCCTAACTTGCCCATATTCTAAATCATCTG
GTTGGTTTTTCAGCCTAGAATTTGATACGCTTTTTAGAAATATGCCCAGAATAGAA
AAGCTATGTTGGGGCACATGTCCTGCAAATATGGCCCTAGAAACAAGTGATATG
GAATTTACTTGGTGAATAAGTTATAAATTCCCACT

5

SEQ ID NO: 80

>gi|927844|gb|R83000.1|R83000 yp87a05.s1 Soares fetal liver spleen 1NFLS Homo sapiens
cDNA clone IMAGE:194384 3'

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10 TTAATCAAATTCCAAAGGTTATCAGCCATATTACATGCCATGATTAGCTTTCTATA
AGCAATTTTTTTNACTGTGTACAGATCGGTGTCAATGAAATAAAAAAATAAAACT
GTATACTAGGGCAAAGAACTTTATTAATCTTTGTTTCAAACCTTGATTCCCAGGGC
TTCTTCGGGCTTAATTAGGCTGCAAAGGAATGAATTGTGTATAAGGCAAAAACCTG
AAAAGGAGGCTGGCAGTGTCCAAGGGGGCTTGGGGGCTTAAAAATATTAGGAGG
15 ATCCCAGGATTTTATCC

SEQ ID NO: 81

>gi|31197|emb|X03363.1|HSERB2R Human c-erb-B-2 mRNA

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25 GGCTGCCAGGTGGTGCAGGGAAACCTGGAACCTCACCTACCTGCCCACCAATGCC
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30 TTCGAAGCCTCACAGAGATCTTGAAAGGAGGGGTCTTGATCCAGCGGAACCCCC
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5 SEQ ID NO: 82

>gi|927595|gb|U27109.1|HSU27109 Human prepromultimerin mRNA, complete cds

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10 ATGGGAACTCTCAGAAGACTATGCCTTCTGCTTCAGTTCCTCCAAATAAAATACA
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35

SEQ ID NO: 83

>gi|182984|gb|L03203.1|HUMGAS3X Human peripheral myelin protein 22 (GAS3) mRNA,
complete cds

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SEQ ID NO: 84

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25 sapiens cDNA clone IMAGE:740914 3'
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SEQ ID NO: 85

35 >gi|1925839|gb|AA282906.1|AA282906 zt14h05.r1 NCI_CGAP_GCB1 Homo sapiens
cDNA clone IMAGE:713145 5' similar to gb:X66733 CD44 ANTIGEN, HEMATOPOIETIC
FORM PRECURSOR (HUMAN);
AAAATGGTCGCTACAGCATCTCTCGGACGGAGGCCGCTGACCTCTGCAAGGCTTT
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TAC

SEQ ID NO: 86

>gi|2668591|gb|U97669.1|HSU97669 Homo sapiens Notch3 (NOTCH3) mRNA, complete cds

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5 CCGCGATGTGGATGAGTGCCTGAGCAACCCCTGCGGCCCGGGCACCTGTACCGA
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45 CGTTGTGACGCGGTGGAGCGCTGGACTTCCCGTACCCACTGCGGGACGTGCGGG
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5 AGATGCTGATGGCATGGATGTCAATGTGCGTGGCCCAGATGGCTTCACCCCGCTA
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10 TGCCCAGGACCACTCAGGCCGCACTCCCCTGCACACAGCTGTACAGCCGATGCC
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20 CCTTCCTCCCTGGCCTCAAAGCGGCACAGTCGGGGTCCAAGAAGAGCAGGAGGC
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45 AGGTATGTACCAAGTAGGCACCCTTGGGCGCACCCACTGGGGCCAGGGGTGCGG
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5

SEQ ID NO: 87

gi|36610|emb|X51417.1|HSSTHOR2 Human mRNA for steroid hormone receptor hERR2

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15 AACGCCATCCCCAAGCGCCTGTGCCTCGTGTGCGGGGACATTGCTTCTGGCTACC
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20 GAGACGGCTGGATTTCGGAGAACAGCCCCTACCTGAGCTTACAGATTTCCCCGCCT
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25 GTGCCTGGATGGAGATCCTCATCCTGGGCATCGTGTACCGCTCGCTTCCCTATGA
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30 CTGCTGCATGAGGCGCTGCAGGACTATGAGCTGAGCCAGCGCCATGAGGAGCCA
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35 CCTGCATCGGGGCTCTGAGCTGTCCCAGAAGAAGGGGTTTCTTGCTTCCTGGCCA
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40 GACCTGGAGGTACCTGGATGGGCAGGGCTTAGTGCCCAGGGCCCAAGAGACTTA
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45 GCCAGCTGAGGTAACCTCCAGGACATGCACCTGGGAACTCGCTGGCTCAGAAAAG
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SEQ ID NO: 88

>gi|1220312|gb|L76191.1|HUMI1R Homo sapiens interleukin-1 receptor-associated kinase (IRAK) mRNA, complete cds

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CCGCTTCTACAAAGTGATGGACGCCCTGGAGCCCGCCGACTGGTGCCAGTTCGCC
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10 CTCGTGCACATCCTCACGCACCTGCAGCTGCTCCGTGCGCGGGACATCATCACAG
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15 GCCCCTTCTTCTACCAAGCCAGGCCAGAGAGCTCAGTGTCCCTCCTGCAGGGAG
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20 TTTCGTCACCCAAACATTGTGGACTTTGCTGGCTACTGTGCTCAGAACGGCTTCTA
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30 GGCTTTGAGAAGCACCCAGAGCACACTGCAAGCAGGTCTGGCTGCAGATGCCTG
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40 ATCGAGCTGGGGGAGTGGCCCAGGATCCCGGCCACAGCCGTGGAAGGACTGGC
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45 GATCCCCCAAATCCGGAAGTCAAAGTTCTCATGGTCAGAAGTTCTCATGGTGCAC
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5 CTTTGGGAGGCCAAGGCAGGAGGATCGCTGGAGCCCAGTAGGTCAAGACCAGCC
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10 AGTGAAGTATGGCTGTAAGTCTCATGGTTCAGTCCTAGCAAGAAGCGAGAATTCT
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SEQ ID NO: 89

>gi|821647|gb|R43734.1|R43734 yg20e10.s1 Soares infant brain 1NIB Homo sapiens cDNA
clone IMAGE:32609 3'

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30 GTGTTTCTTTCAGTGCTCTAAAGGAACCTTTGTATTTGGGGCAGCTGTGCTCTGGTC
ATGTCAGGGCTGGCTGGGACAGGGAGTTTGGATGGCTTACGGGCGGCCGCTGGA
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35 SEQ ID NO: 90

>gi|34627|emb|X04481.1|HSMH3C2R Human mRNA for complement component C2

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40 GGAGCCTTCTACCTACTCCTGCCCCCAGGGCCTGTACCCATCCCCAGCATCACG
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SEQ ID NO: 91

>gi|2216792|gb|AA486628.1|AA486628 ab16a05.r1 Stratagene lung (#937210) Homo sapiens cDNA clone IMAGE:840944 5' similar to gb:M62829 EARLY GROWTH

40 RESPONSE PROTEIN 1 (HUMAN);
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 AAAATAATGAACTGCATGTTTATAACATACAAAAATCGCCGCCTACTCAGTAGGT
 AACTACAACATTCCAACCTCCTGAATATATTTATAAATTTACATTTTCAGTTAAAA
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 45 AGAACCGAAGCTCAGCTCAGCCCTCTTCTTATTTTGCTCCCAAAGCCTCCCCCA
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SEQ ID NO: 92

>gi|898286|gb|H27933.1|H27933 y158e09.s1 Soares breast 3NbHBst Homo sapiens cDNA clone IMAGE:162472 3' similar to gb:M64572 PROTEIN-TYROSINE PHOSPHATASE PTP-H1 (HUMAN);

5 TNGGNCAATCAAAATGANGGGGTTCTTNGAATAANTNAACATCAGANTGTGTTT
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SEQ ID NO: 93

10 >gi|340202|gb|J03258.1|HUMVDR Human vitamin D receptor mRNA, complete cds
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45 CCCACAGCTCCCACCCACCCCTTCAGTGCCCAACATCCCATTGCCCTGGT
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SEQ ID NO: 94

>gi|1716184|gb|AA146802.1|AA146802 zo41b09.r1 Stratagene endothelial cell 937223

Homo sapiens cDNA clone IMAGE:589433 5' similar to SW:YHGK_ECOLI P46849

HYPOTHETICAL 15.4 KD PROTEIN IN MALT-GLPR INTERGENIC REGION ;

5 GANGCTCAACATTTATCTGGACTGGAAATGATTTCGAGATTTGTGTGATGGGCAA
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10 CTTCAAGCCAATTGTTGAAAAATTTGGTTTCATATTTAATTGTGACATTAAACA
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15 SEQ ID NO: 95

>gi|31113|emb|X00588.1|HSEGFPRE Human mRNA for precursor of epidermal growth
factor receptor

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20 ACAACCACCGCGCACGGCCCCCTGACTCCGTCCAGTATTGATCGGGAGAGCCGG
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SEQ ID NO: 96

>gi|1770395|emb|X83864.1|HSEDG3 H.sapiens EDG-3 gene

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10

SEQ ID NO: 98

>gi|1673574|gb|U76549.1|HSU76549 Human cytokeratin 8 mRNA, complete cds

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SEQ ID NO: 99

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SEQ ID NO: 100

10 >gi|2219420|gb|AA490238.1|AA490238 aa44a03.s1 Soares_NhHMPu_S1 Homo sapiens
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GENE MIG-2 ;
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SEQ ID NO: 101

25 >gi|292069|gb|L04510.1|HUMGUABIND Human nucleotide binding protein mRNA,
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TGGAATTGGAATGGCTCACACAGAACATGTACCAGGGACTGCAGAGAATGCCCG
GTCATGTATTCGAGCTTATTTTTATGATCTACATGAAACTCTGTGTCGTCAAGAAG
AAATGGCTCTAAGTGTTGTTGATGCTCATGTTTCGTGAAAAATTGATTTGGCTCAG
GCAGCAACAAGAAGATATGACTATTTTGTGTCAGAGGTTTCTGCAGCCTGCCTC
45 CACTGTGAAAAGACTTTGCAGCAGGATGATTGTAGAGTTGTCTTGGCAAAACAG
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GTTGCAGATCACATTGAGTTGGATGCCAGCATCCCTGTCACTTTTACAAAGGATA
ATCGAGTTACATTGGACCAAAAATGGAAATTCGGGTCGTTACGTTAGGATTGGA
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CCCATTCCAACAATTGGTTTTAACGTGGAAACTGTAGAATATAAAAAATCTAAAAT
 TCACTATTTGGGATGTAGGTGGAAAACACAAATTAAGACCATTGTGGAAACATT
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 5 AGATGCTCTGCTCCTGATTTTTGCTAACAAACAGGATGTTGCTGGAGCACTGTCA
 GTAGAAGAAATCACTGAACACTCAGTCTCCATAAATTATGCTGTGGCCGTAGCT
 GGTATATTCAGGGCTGTGATGCTCGAAGTGGTATGGGACTGTATGAAGGGTTGG
 ACTGGCTCTCACGGCAACTTGTAGCTGCTGGAGTATTGGATGTTGCTTGATTTTA
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 10 TTTAAGAAATTATACATCTCAAAAGATGGTAATTTAGGATGCATATATATATATA
 TATATATAAAGGAATCTTGATTGGGAATTCAGTACTTTGCTTTAAAAAAATTTT
 GTGGCAGAATTAAATTTCTAATTGAGCAGATTAGATTGAATTAAATAGAACTTA
 TTGAATATACATTCTTTTAAAAAGTATATTTGTTATTTAAGTTTTTCAGATAATAT
 GTGACCAATATACTGGGAAAGAGGTAGTCACAGAGAAAGGGTAAGTGAAGGTTT
 15 ATTCTTTCAGTGAAAAAAGAATAGCCAATTGAGTGCCTAATGAGACCTCTGTGTG
 AAGCAAGTGAAGTATAGCTGCTTCTTTAACCTGCCTTTTCACTGAATGTTGGCA
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 GCTAAGAACTATAAGGTACAGAAAATTAATACTTTATATAGTGTTTTATTAACCTT
 20 TCTCCTACAGCATTTTGTATAAAACACAATGAGGGAGTGAAATGTTACCCAATTA
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 GCATCCTTTGTGGGAATGACTATAGGTAAAATGTAGTAAGTAACGCAGAACCCAG
 25 GGTGGCTTTATTTAAAAGCTAGTGACCTAAATAGAAAGCGAACTTCAAGAGAA
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 30 TAAAGAATATTATTATGGAAGCACGATTTATTTAAATAGGTACATTGAGACTTTT
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 AACAAAGCATTAAAAAAAAGCCTATCAGTATTATGGGCTATATGTAAATAAAT
 35 AAATGTAATATTTTCATCCTTTATTTTTTCAGGTAAAAGGTCATGCTGTTACAGGTGT
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SEQ ID NO: 102

40 >gi|577412|gb|U13666.1|HSU13666 Human G protein-coupled receptor (GPR1) gene,
 complete cds
 GGGCTGCAGTGAGCCAAAAGCATGCCATTGCACTCCAGCTTGGGCAACAGAGTG
 AGACCCTGTCTCAAAAAAAGAAAAATAATACTATGTCTGGTCCATAACCTGA
 AATATTTTTATCTTCACGTTCTTATCATTCACTGAACTTTTATTTTTCTTTTAAAA
 45 TTTTTCTTTCTTTTAAATTTGCTTCTACAGATTTCTTCATTCTCCATTTAGCAA
 GGTCATGGAAGATTTGGAGGAAACATTATTTGAAGAATTTGAAAACCTATTCCTAT
 GACCTAGACTATTACTCTCTGGAGTCTGATTTGGAGGAGAAAGTCCAGCTGGGAG
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 GGAAATGCCATCGTCATTTGGTTACGGGGCTCAAGTGGAAGAAGACAGTCACC

ACTCTGTGGTTCCTCAATCTAGCCATTGCGGATTTTCATTTTTCTTCTCTTTCTGCCC
CTGTACATCTCCTATGTGGCCATGAATTTCCACTGGCCCTTTGGCATCTGGCTGTG
CAAAGCCAATTCCTTCACTGCCCAGTTGAACATGTTTGCCAGTGTTTTTTTCCTGA
CAGTGATCAGCCTGGACCACTATATCCACTTGATCCATCCTGTCTTATCTCATCGG
5 CATCGAACCCTCAAGAACTCTCTGATTGTCATTATATTCATCTGGCTTTTGGCTTC
TCTAATTGGCGGTCTCTGCCCTGTACTTCCGGGACACTGTGGAGTTCAATAATCAT
ACTCTTTGCTATAACAATTTTTCAGAAGCATGATCCTGACCTCACTTTGATCAGGC
ACCATGTTCTGACTTGGGTGAAATTTATCATTGGCTATCTCTTCCCTTTGCTAACA
ATGAGTATTTGCTACTTGTGTCTCATCTTCAAGGTGAAGAAGCGAACAGTCCTGA
10 TCTCCAGTAGGCATTTCTGGACAATTCTGGTTGTGGTTGTGGCCTTTGTGGTTTGC
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AATAGTTGCTTGAACCCCATCCTTTATGTCCTAATTAGTAAGAAGTTCCAAGCTC
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15 TTCTGGCACAGTGAGTGAACAGCTCAGGAACCTCAGAAACCAAGAATCTGTGTCT
CCTGGAAACAGCTCAATAAGTTATTACTTTTCCACAAATCAGTATATGGCTTTTAA
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GACTCCACTTTCATAGTTATTGTTTCTGGTCACATATATGGCATCACATTTT

20 SEQ ID NO: 103

>gi|1185462|gb|U38545.1|HSU38545 Human ARF-activated phosphatidylcholine-specific
phospholipase D1a (hPLD1) mRNA, complete cds

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CGCCCTGCAGCCCTTTGCTTTTACTCTGTCCAAAGTTAACATGTCACTGAAAAA
25 CGAGCCACGGGTAAATACCTCTGCACTGCAGAAAATTGCTGCTGACATGAGTAA
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CTACGACGTGTCTCCAGCGATCCCAAGATACAAGAAGTGTATATCCCTTTCTCT
GCTATTTATAACACTCAAGGATTTAAGGAGCCTAATATACAGACGTATCTCTCCG
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30 GGGTACCAAGTATTAATCTTTACACTATTGAATTAACACATGGGGAATTTAAATG
GCAAGTTAAGAGGAAATTCAAGCATTTTCAAGAATTTACAGAGAGCTGCTCAA
GTACAAAGCCTTTATCCGCATCCCCATTCCCACTAGAAGACACACGTTTAGGAGG
CAAAACGTCAGAGAGGAGCCTCGAGAGATGCCAGTTTGCCCCGTTTCATCTGAA
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35 TTGACAAAGATACTAAAAATGCCCATGTATAGAAACTATCATGCCACAACAGAG
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40 GTAGACAAAGAATTCAAAATTAAGGTGGGGAAGAAGGAGACAGAAACGAAATA
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ACCAACTTTCTCAAAGATCATCGATTTGGGTCATATGCTGCTATCCAAGAGAATG
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45 AATGGAAGAGGCAAATGAAGAGATTTTATCACAGACTGGTGGCTGAGTCCAGA
AATCTTCCTGAAACGCCCAGTGGTTGAGGGAAATCGTTGGAGGTTGGACTGCATT
CTTAAACGAAAAGCACACAAGGAGTGAGGATCTTCATAATGCTCTACAAAGAG
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GGAGGGATTGACCTGGCCTATGGAAGGTGGGACGACAATGAGCACAGACTCACA
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CTGCCGCAATGGAGTCTATGGAATCCTTAAGACTCAAAGATAAAAATGAGCCTG
5 TTCAAAACCTACCCATCCAGAAGAGTATTGATGATGTGGATTCAAAACTGAAAG
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10 ATACCGGGTCCATCCGTAGTTTACAGACAGGTGTGGGAGAGCTGCATGGGGAAA
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15 TTCTTATCCTTTTCTGCTTCCAAAGTCTCAAAACAACAGCCCATGAGTTGAGATATC
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20 GAAAGCTCACAGGGAAAACCAGAAATACCGGGTATATGTCGTGATACCACTTCT
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25 AGCAAGTTGTTAATTGCTGATGATAAACTGTTATTATTGGCTCTGCCAACATAA
ATGACCGCAGCATGCTGGGAAAGCGTGACAGTGAAATGGCTGTCATTGTGCAAG
ATACAGAGACTGTTCCCTTCAGTAATGGATGGAAAAGAGTACCAAGCTGGCCGGT
TTGCCCAGGACTTCGGCTACAGTGCTTTAGGGTTGTCCTTGGCTATCTTGATGAC
CCAAGTGAGGACATTCAGGATCCAGTGAGTGACAAATTCTTCAAGGAGGTGTGG
30 GTTTCAACAGCAGCTCGAAATGCTACAATTTATGACAAGGTTTTCCGGTGCCTTC
CCAATGATGAAGTACACAATTTAATTCAGCTGAGAGACTTTATAAACAAGCCCGT
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35 TTGGCAGCTCAAAGACTTCCACCCTGGAGACCACACTGCACACAGTGACTTCCTG
GGGATGTCATAGCCAAAGCCAGGCCTGACGCATTCTCGTATCCAACCCAAGGAC
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40 AATTC

SEQ ID NO: 104

>gi|1010012|gb|H57180.1|H57180 yr10f05.s1 Soares fetal liver spleen 1NFLS Homo sapiens
cDNA clone IMAGE:204897 3' similar to gb:X14034 1-PHOSPHATIDYLINOSITOL-4,5-
45 BISPHOSPHATE PHOSPHODIESTERASE GAMMA (HUMAN);

CTCTCAATGGGCGCACGGGCTACGTTCTGCAGCCTGAGAGCATGAGGACAGAGA
AATATGACCCGATGCCACCCGAGTCCCAGAGGAAGATCCTGATGACGCTGACAG
TCAAGGTTCTCGGTGCTCGCCATCTCCCCAACTTGGACGAAGTATTGCCTGTNC
CTTTGTAGAAGTGGAGNTCTGTGGAGCCGAGTATGACAACAACAAGTTCAAGAC

GACGGTTGTGAATGATAATGGCCTCAGNCCTATCTGGGCTCCAACACAGGAGAA
GGTGACATTTGANATTTATGACCCAAACCTGGGNATTTTTTTCGCTTNGTGTTT
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TTACCCCTTTAAAGGCAGTCAAAATCAGGGNTTCAGGGTNCCT

5

SEQ ID NO: 105

>gi|180602|gb|M58552.1|HUMCLG4Q01 Human collagenase type IV (CLG4) gene, exon 1
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10 ACCTCAGGACGTCAAGGGCCTAGAGCGACAGATGTTTCCCAGCAGGGGGTTCTG
AGGCTGTGCGCCCAGATCGCGAGAGAGGCAAGTGGGGTGACGAGGTTCGTGCACT
GAGGGTGGACGTAGAGGCCAGGAGTAGCAGGCGGCCGGGAAAAGAGGTGGAG
AAAGGAAAAAAGAGGAGAAAAAGTGGAGGAGGGCGAGTAGGGGGGTGGGGCAG
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15 CCCAGCCCAGCCGGCTACATCTGGCGGCTGCCCTCCCTTGTTTCCGCTGCATCCA
GACTTCCTCAGGCGGTGGCTGGAGGCTGCGCATCTGGGGCTTTAAACATACAAA
GGGATTGCCAGGACCTGCGGCGGCGGCGGCGGCGGGGGCTGGGGCGCGGG
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CCCTCGGAGCGCAGCCCTGCGCCGCGGACCAGGCTCCAACCAGGCGGCGAGGCG
20 GCCACACGCACCGAGCCAGCGACCCCGGGCGACGCGCGGGGCCAGGGAGCGCT
ACGATGGAGGCGCTAATGGCCCGGGGCGCGCTCACGGGTCCCCTGAGGGCGCTC
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AGTTCCCGGCGATGTCGCCCCCAAACGGACAAAGAGTTGGCAGTGGTGAGTT
GCT

25

SEQ ID NO: 106

>gi|37849|emb|X56134.1|HSVIMENT Human mRNA for vimentin
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TCCGTGTCTCTCGTCTCTACCGCAGGATGTTTCGGCGGGCCCGGGACCGCGAGCC
30 GGCCGAGCTCCAGCCGGAGCTACGTGACTACGTCCACCCGCACCTACAGCCTGG
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GCGGCTCCTGCAGGACTCGGTGGACTTCTCGCTGGCCGACGCCATCAACACCGAG
TTCAAGAACACCCGCACCAACGAGATGGTGGAGCTGCAGGAGCTGAATGACCGC
35 TTCGCCAACTACATCGACAAGGTGCGCTTCTGGAGCAGCAGAATAAGATCCTGC
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40 GCAATCTTTCAGACAGGATGTTGACAATGCGTCTCTGGCACGTCTTGACCTTGAA
CGCAAAGTGGAATCTTTGCAAGAAGAGATTGCCTTTTTGAAGAACTCCACGAA
GAGGAAATCCAGGAGCTGCAGGCTCAGATTCAGGAACAGCATGTCCAAATCGAT
GTGGATGTTTCCAAGCCTGACCTCACGGCTGCCCTGCGTGACGTACGTCAGCAAT
ATGAAAGTGTGGCTGCCAAGAACCTGCAGGAGGCAGAAGAATGGTACAAATCCA
45 AGTTTGCTGACCTCTCTGAGGCTGCCAACCAGGAACAATGACGCCCTGCGCCAGGC
AAAGCAGGAGTCCACTGAGTACCGGAGACAGGTGCAGTCCCTCACCTGTGAAGT
GGATGCCCTTAAAGGAACCAATGAGTCCCTGGAACGCCAGATGCGTGAAATGGA
AGAGAACTTTGCCGTTGAAGCTGCTAACTACCAAGACACTATTGGCCGCTGCAG
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GACCTGCTCAATGTTAAGATGGCCCTTGACATTGAGATTGCCACCTACAGGAAGC
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 TCTAGTTCTTAACAACCGACACTCCTACAAGATTTAGAAAAAAGTTTACAACATA
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SEQ ID NO: 107

>gi|2219635|gb|AA490462.1|AA490462 aa45b02.s1 Soares_NhHMPu_S1 Homo sapiens
 15 cDNA clone IMAGE:823851 3' similar to TR:G607132 G607132 AEBP1 MRNA. ;contains
 element TAR1 TAR1 repetitive element ;
 TTTTTTTTTTCCGTGCCATGAGCTTGTTTTATTGGAGTGACCTTGGCTCCCTCCCT
 CTGCCCCCTACTCCAACACTGCAGCAACCCCATCTCTTACGAGACTGGCAGGTGGA
 GCAGGAGCCTCTACACAGCCTCTGGTCCTTAGGTCCCAGTCATGTTTGCACCCCC
 20 TCAAAGGGCTAGGACCAGCCCTTCCTTTCAGTGTCCATACCAGGGGCCTTCCATG
 TGCTGATGGGTGATGTGACTGTGGTCAGCAGGCTTGGGAAGTGCTGCTGCTGTAG
 CTTGAGTTGGGCTGGGGTCTTGGTAGGACGCTGATCTCAGAAGTCCCCAAAGTTC
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 CCTCTTTCTCCCTTCTCCTTCTTCTCCTCAAACCTCGGGTTTCAACTGGGTCTCAAAC
 25 TCAGACTCCAACCTGGGTCTCAAACACTGGCTCCAACCTTGGGCCCAAACCTTCGGG
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SEQ ID NO: 108

>gi|1384184|gb|W74565.1|W74565 zd56e05.r1 Soares_fetal_heart_NbHH19W Homo
 30 sapiens cDNA clone IMAGE:344672 5' similar to SW:HEXP_LEIMA Q04832 DNA-
 BINDING PROTEIN HEXBP ;
 GGAGAAATGGGGCACCTGTCTAGATCTTGTCTGATAATCCCAAAGGACTCTATG
 CTGATGGTGGCGGTTGCAAACCTTTGTGGCTCTGTGGAACATTTAAAGAAAGATTG
 CCCTGAAAGTCAGAAATGAGAGCGAATGGTCAACAGTTGGTCGCTGGGCAAAGGG
 35 AATGAGTGCAGACTATGAAGAAATTTTGGATGTACCTAAACCGCAAAAACCCAA
 AACAAAAATACCTAAAGTTGTTAATTTTTGATAACAGCTAGCACTATCATGAGTT
 ACTACCTCATTGTTACTTTCTAAACCCAGGCCCGCTTCACAAGTTAGAGTTGAG
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 TGTTGGCCAAAAACCAA
 40 T

SEQ ID NO: 109

>gi|236181|gb|S57551.1|S57551 guanylate cyclase-coupled enterotoxin receptor [human, T84
 45 colonic cell line, mRNA, 3787 nt]
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5 TACTCCACCTTCCAGATGTACCTTGACACAGAATTGAGCTACCCCATGATCTCAG
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10 CACGAACCTCGGCTTTAAGGTGGTGTAAAGACAAGATAAGGAGTTTCAGGATATCT
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15 TTTCTCCAGGAATCTATCACCAACAAAACGAGACTTTCGTCTTGCCTATTTGAAT
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20 TAAATAAGACCTATCCTGTGGATATGAGCCCCACATTCACCTGGAAGAACTCTAA
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30 ATTCATGGATTGGGAGTTTAAGATCTCTGTCTTGTATGACATTGCTAAGGGAATG
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35 TCTGCGGAAAGAAACCTTCTACACTTTGAGCTGTCTGGGACCGGAATGAGAAGAT
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 5 CAGCGTTTGCAAGCAGAATTTTCAGACATGATTGCCAACTCTTTACAGAAAAGAC
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 10 AATGTCTTAGGCTTGGCTGCCCTGTTTGGACCATGGACTTTCTTTGCATGAATCAG
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 15 TGCAGAAAATATGCTATATATTAGGCAAGAATAAAAGCTAAAGGTTCCCAAAA
 AAAAAA

SEQ ID NO: 110

>gi|1563886|gb|U66198.1|HSU66198 Human fibroblast growth factor homologous factor 2
 (FHF-2) mRNA, complete cds
 20 ATGGCGGCGGCTATCGCCAGCTCGCTCATCCGTCAGAAGAGGGCAAGCCCCGCGAG
 CGCGAGAAATCCAACGCCTGCAAGTGTGTCAGCAGCCCCAGCAAAGGCAAGACC
 AGCTGCGACAAAAACAAGTTAAATGTCTTTTCCCGGGTCAAACCTCTTCGGCTCCA
 AGAAGAGGCGCAGAAGAAGACCAGAGCCTCAGCTTAAGGGTATAGTTACCAAGC
 25 TATACAGCCGACAAGGCTACCACTTGCAGCTGCAGGCGGATGGAACCATTGATG
 GCACCAAAGATGAGGACAGCACTTACACTCTGTTTAACTCATCCCTGTGGGTCT
 GCGAGTGGTGGCTATCCAAGGAGTTCAAACCAAGCTGTACTTGGCAATGAACAG
 TGAGGGATACTTGTACACCTCGGAACTTTTACACCTGAGTGCAAATTCAAAGAA
 TCAGTGTGTTGAAAATTATTATGTGACATATTCATCAATGATATACCGTCAGCAGC
 30 AGTCAGGCCGAGGGTGGTATCTGGGTCTGAACAAAGAAGGAGAGATCATGAAAG
 GCAACCATGTGAAGAAGAACAAGCCTGCAGCTCATTTTCTGCCTAAACCACTGA
 AAGTGGCCATGTACAAGGAGCCATCACTGCACGATCTCACGGAGTTCTCCCGATC
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SEQ ID NO: 111

>gi|460288|gb|L29401.1|HUMLDLR01 Human low density lipoprotein receptor gene, exon 1
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 40 ATATACAACGAAAGGAAGCTAAAAATCTATACACAATTCCTAGAAAGGAAAAGG
 CAAATATAGAAAGTGGCGGAAGTTCCCAACATTTTTAGTGTTTTCCTTTGAGGC
 AGAGAGGACAATGGCATTAGGCTATTGGAGGATCTTGAAAGGCTGTTGTTATCCT
 TCTGTGGACAACAACAGCAAAATGTAAACAGTTAAACATCGAGAAATTCAGGA
 GGATCTTTCAGAAAGATGCGTTTTCCAATTTTGAGGGGGCGTCAGCTCTTCACCGGA
 45 GACCCAAATACAACAAATCAAGTCGCCTGCCCTGGCGACACTTTCGAAGGACTG
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 TGCAATCGCGGAAGCCAGGGTTTCCAGCTAGGACACAGCAGGTTCGTGATCCGG

GTCGGGACACTGCCTGGCAGAGGCTGCGAGCATGGGGCCCTGGGGCTGGAAATT
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TCCA

5 SEQ ID NO: 112

>gi|789613|gb|R33755.1|R33755 yh82d06.r1 Soares placenta Nb2HP Homo sapiens cDNA
clone IMAGE:136235 5' similar to gb:X08058_ma1 GLUTATHIONE S-TRANSFERASE P
(HUMAN);

GGATCTGGTCTCCACAAATGAAGGTCTTGCCCTCCCTGGTTCTGGGACAGCAGGGT
10 CTCAAAAGGCTTCAGTTGCCCGGGCAGTGCTTCACATAGTCATCCTTGCCCGCCT
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GTGCGGGCCCAGGGTGACGCAGGATGGTATTGGACTGGTACAGGGTGAGGTCTC
CGTCTGGGAACCTTNGGGGAGCTGCCCGTATTAGGCANGGAGGCTTTTGAGTTGA
15 GCCCTCCTTNCGGCCGCAAGCTTATTTCCCTTTTAGTTGAGGGTTAANTTTAAGTT
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CCAATTTA

SEQ ID NO: 113

20 >gi|181134|gb|M37435.1|HUMCSDF1 Human macrophage-specific colony-stimulating
factor (CSF-1) mRNA, complete cds

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CCTCGGCCGGGGCGCCCACTCCGCAGCAGCCAGCGAGCCAGCTGCCCCGTATGA
CCGCGCCGGGGCGCCGCGGGCGCTGCCCTCCCACGACATGGCTGGGCTCCCTGCT
25 GTTGTGTTGGTCTGTCTCCTGGCGAGCAGGAGTATCACCGAGGAGGTGTGCGGAGTAC
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GAAAGATCCAGTGTGCTACCTTAAGAAGGCATTTCTCCTGGTACAAGACATAATG
GAGGACACCATGCGCTTCAGAGATAACACCGCCAATCCCATCGCCATTGTGCGAG
30 CTGCAGGAACTCTCTTTGAGGCTGAAGAGCTGCTTCACCAAGGATTATGAAGAGC
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35 CCTCTGTCTCCCCTCATCAGCCCCTCGCCCCCTCCATGGCCCCTGTGGCTGGCTTG
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GGCTCACCACAGCCTCGCCCCCTGTGTCGGGGCCTTCAACCCCGGGATGGAGGATA
40 TTCTTGACTCTGCAATGGGCACTAATTGGGTCCCAGAAGAAGCCTCTGGAGAGGC
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GGGCAGCATGCAGACAGAGCCCGCCAGACCCAGCAACTTCCTCTCAGCATCTTCT
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45 AGAAGACAGACCATCCATCTGCCCTGCTCAGAGACCCCCCGGAGCCAGGCTCTC
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20 CCATTGCACTGTGAACACTGTACCTGCCTGCTGAACAGCCTCCCCCGTCCATCC
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25 GACATTCCCAAGAGGGGAAGGGACTAGTGGGAGAGAGCAAGGGAGGGGAGGGCA
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CCCTGGACTGGGCTGCATCTCAGCCCCACCTGCATGGTATCCAGCTCCCATCCAC
30 TTCTACCCCTTCTTTCCTCCTGACCTTGGTCAGCAGTGATGACCTCCAACCTCTCAC
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35 GAGACCCTGCCCTACCTGGCCGCTGGGCCCCGTGACTTTCCCTTCCTGCCCAGGA
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40 CTGCAGAAGCTCTTTTTGAGCACTTGGTGGCATCAGAGCAGGAGGAGCCCCAGA
GCCACCTCTGGTGTCCCCAGGCTACCTGCTCAGGAACCCCTTCTGTTCTCTGAG
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45 AG

SEQ ID NO: 114

>gi|2179481|gb|AA456271.1|AA456271 zx99f08.r1 Soares_NhHMPu_S1 Homo sapiens
cDNA clone IMAGE:811911 5' similar to TR:E217390 E217390 NEOSIN ;

GGCGCCGCCATTTTAGCGTTTTGTGTCAGAAGCGTCCGCGCCGAGCGGCAGGAGGC
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 CTGCCCCGGGAGGCTACAGAGCAGGAGATTCGCTCACTCTTCGAGCAGTATGGG
 AAGGTGCTGGAATGTGACATCATTAAGAATTACGGCTTTGTGCACATAGAAGAC
 5 AAGACGGCAGCTGAGGATGCCATACGCAACCTGCACCATTACAAGCTTCATGGG
 GTGAACATCAACGTGGAAGCCAGCAAGAATAAGAGCAAAACCTCAACAAAGTTG
 CATGTGGGCAACATCAGTCCCACCTGCACCAATAAGGAGCTTCGAGCCAAGTTTG
 AGGAGTATGGTCCGGTCATCGAATGTGACATCGTGAAAGATTATGCCTTCGTACA
 CATGGAGCGGGCAGAGGATGCAGTGGAGGCCATCAGGGGCCTTGATAACACAGA
 10 GTTCAAGGTGGGATGTGTGTGGGCTG

SEQ ID NO: 115

>gi|3171911|emb|AJ001015.1|HSRAMP2 Homo sapiens mRNA encoding RAMP2

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 CCCTAGGACCCGAGTCGGGCGGCGCGCAGCCGTCCGCCTCCTCCTTCTGCTGGGC
 GCTGTCCTGAATCCCCACGAGGCCCTGGCTCAGCCTCTTCCCACCACAGGCACAC
 CAGGGTCAGAAGGGGGGACGGTGAAGAACTATGAGACAGCTGTCCAATTTTGCT
 GGAATCATTATAAGGATCAAATGGATCCTATCGAAAAGGATTGGTGCGACTGGG
 20 CCATGATTAGCAGGCCTTATAGCACCCCTGCGAGATTGCCTGGAGCACTTTGCAGA
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 CACCAGATCCACTTTGCCAACTGCTCCCTGGTGCAGCCACCTTCTCTGACCCCCC
 AGAGGATGTACTCCTGGCCATGATCATAGCCCCATCTGCCTCATCCCCTTCCTC
 ATCACTCTTGTAGTATGGAGGAGTAAAGACAGTGAGGCCAGGCCTAGGGGGCA
 25 CGAGCTTCTCAACAACCATGTTACTCCACTTCCCCACCCCAACAGGCCTCCCTCC
 TCCCCTCCTACTCCCTTTTCTCACTCTCATCCCCACCACAGATCCCTGGATTGCTG
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 CTTTTTTTTTGA

30 SEQ ID NO: 116

>gi|2456985|gb|AA608557.1|AA608557 ae54a09.s1 Stratagene lung carcinoma 937218

Homo sapiens cDNA clone IMAGE:950680 3' similar to contains element MER24 MER24
 repetitive element ;

TTTTTCTCTTATATTCCTTTATTTGGTAAAACTCAGAACTAACAATTCACA
 35 TCCTCCCACCTTCTTCTTTCCGAAGAAGGCAGTTTGCAGAGACAAAAGGGCTGTG
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 CTCCCTACACTGCCAATCTAAATAAAAAGAGGACAATGCATGAGTGTGAGATAC
 40 ACATACACACACACATACACACACACACACGCACAGCTTCCTTTTCAGCCAAA
 GAACTGCAAAATCCTTCCCCGGAAGGAGGACAACCTGGCAACACCAATCAAGGCT
 TGGTGGTCTAAGGTGATGGCTGGAATCATGTGAGACTGGTAAAAATCCAGGGAG
 AAAATGTTTCACCTTCAGCTCATTCCCAAGTCTCTATGAAGCCCGCCCCACTTCCA
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 45 CCAAGAAGACGATGGTGGAGAGGAGGGGGAGGGCAGCAGG

SEQ ID NO: 117

>83 BLOOD 231120.25 Incyte Unique

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 GGAAAGAATTGTAGGAAGGAAAACTTGTAGAAGTAGAGGGTGGAGAGTGCGA
 AGAGGTGGAGTATGATGGGCAGTCCGATCTTTCCATCTGGGCTTTCAGACAATG
 5 GGATATGTCATGGAAGGCTTCTTTAAACACCAGAAGAAATTCAGGATAAAGCTC
 AAAAAGAGCAGGCAATCGATAGGGGTTGAAAATCCACTCAGTAGGCCACGGAA
 GGACTTCAAGAAGGTTGATCGTTCTGTGCTGGATGTTGTAGGTGTCCTACGTGA
 AGGCAATCGACATCTGGATGGCTGTGTGTCTGCNCTTTGTGTTTCGCTGCCTTGCTG
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 10 GAGTTGTTGGGCTTGAGTTGTTGTTCTCCCTCACTCTTTTCTGTAAACCTCATTTCT
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 15 AGGGGCGCACGCCTGCGCAAACACAGCACCTCCCGAGCCACGAGGGCCGCTCAC
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 CTGCGCCTTTTTTTTC

20 SEQ ID NO: 118

>gi|2079053|gb|AA419164.1|AA419164 zv35f12.r1 Soares ovary tumor NbHOT Homo
 sapiens cDNA clone IMAGE:755663 5' similar to gb:X07282 RETINOIC ACID
 RECEPTOR BETA-2 (HUMAN);, mRNA sequence

CACTAGGTCAGTGCATCTGCTTAATCTGTGGAGACCGCCAGACCGTTGAGGAACC
 25 GACAAAAGTAGATAAGCTACAAGAACCATTGCTGGAACACTAAAAATTTATATC
 AGAAAAAGACGACCCAGCAAGCCTCACATGTTTCCAAAGATCTTAATGAAAATC
 ACAGATCTCCGTAGCATCAGTGCTAAAGGTGCAGAGCGTGTAATTACCTTGAAA
 ATGGAAATTCCTGGATCAATGCCACCTCTCATTCAAGAAATGCTGGAGAATTCTG
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 30 TAGCATCTCACCCAGCTCAGTGGAACACAGTGGGGTCAGTCAGTCACCACTCGTG
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 TTTAAATGCAAGAAAAAA

SEQ ID NO: 119

35 >gi|186330|gb|M74782.1|HUMIL3B Human interleukin 3 receptor (hIL-3Ra) mRNA,
 complete cds

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 AGGCACCTCTGTCTGCGTTCCGGAGCTGCGTTCCCGATGGTCCTCCTTTGGCTCA
 40 CGCTGCTCCTGATCGCCCTGCCCTGTCTCCTGCAAACGAAGGAAGATCCAAACCC
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 45 GAACAGTGGGAAGCCTTGGGCAGGTGCGGAGAATCTGACCTGCTGGATTCATGA
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 CTCGACTCTCCAGCGGTTCTCAAAGTTCCACATCCTGGTGCGGGGCAGGAGCGC

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GAAAATGAGAAGTCATTTCAATCGCAAATTTTCGCTATGAGCTTCAGATACAAAA
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5 ACTCAATCCTGGAACGTACACAGTACAAATAAGAGCCCGGAAAGAGTGTATGA
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10 AGCTGGTGGTCTGGGAGGCGGGCAAAGCCGGCCTGGAGGAGTGTCTGGTGACTG
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15

SEQ ID NO: 120

>gi|6981725|gb|U48730.2|HSU48730 Homo sapiens transcription factor Stat5b (stat5b)

mRNA, complete cds

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25 GTCCGCTGCATCCGCCATATATTGTACAATGAACAGAGGTTGGTCCGAGAAGCCA
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20

>gi|1490144|gb|AA025156.1|AA025156 ze78h06.r1 Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone IMAGE:365147 5' similar to gb:M11730 ERBB-2 RECEPTOR PROTEIN-TYROSINE KINASE PRECURSOR (HUMAN);. mRNA sequence

25

>gi|189177|gb|M58603.1|HUMNFKB Human nuclear factor kappa-B DNA binding subunit (NF-kappa-B) mRNA, complete cds

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GCACTGTAAGTGTGACCCAAGGACATGGTGGTCGGCTTCGCAAACCTGGGTAT
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15 GTGCAGAGGAAACGTCAGAAGCTCATGCCAATTTTTTCGGATAGTTTTCGGCGGTG
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SEQ ID NO: 123

>gi|34036|emb|X12881.1|HSKER18R Human mRNA for cytokeratin 18

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35

SEQ ID NO: 124

>gi|183986|gb|M11730.1|HUMHER2A Human tyrosine kinase-type receptor (HER2)

mRNA, complete cds

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SEQ ID NO: 125

>gi|340247|gb|M54930.1|HUMVIP89 Human vasoactive intestinal peptide and peptide
 histidine isoleucine mRNA, 3' end

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SEQ ID NO: 126

>gi|1679601|emb|Y09479.1|HSEDG2 H.sapiens mRNA for G protein-coupled receptor Edg-
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40

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15 SEQ ID NO: 127

>gi|3242744|gb|AC004126.1|AC004126 Human Chromosome 11q12.2 PAC clone
 pDJ606g6, complete sequence [Homo sapiens]

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112

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15 AGTGAGGTGCCAGCTAGCTGCAGAGCCACCCTGTGTTGACACCTCGCCCCCTGCT
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20 GGGGCTTCTGCAGAGACTGGTTTGGGAAAGTGGGTGCTAGGGAAAAGCTCTGCT
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30 TGACATGGTTGTTGGCCATGGAAGGCCTCGGGCCGTCCTGAGCTCAGATCTTGGC
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35 GGGTACATGAGGCAGGGGTCGAGGCCCTGGTTTGCACCCCCAAGTGGGGCAGAA
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25 CACGATGTGCGCAGGGGCTTGTCTGAAGCATCTGGGAGAATCTGAAAGGGGGA
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5 TCTTTCTCTTTTAAAGATTCAAGGCCCATTTTGGTGTCCCTTGGCCCTGCCGACTT
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10 GCTGTCAAACAGAACGTTCTGTGATGGTGGAAACATTCCACATTGACACTGTCCA
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20 TGCTTCCCACCCATCTCCAGGCTCACTTACTACCCACCGAAGCTGCTCCCTCAA
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25 AAGCCGGGAGTCCCTGTAAGGGTCACCAGGTCCTGCTGTCTCTCTGACCTCATCT
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SEQ ID NO: 128

10 >gi|2570128|dbj|AB000714.1|AB000714 Homo sapiens hRVP1 mRNA for RVP1, complete
 cds
 AATTCGGCACGAGGGCAGGTGCAGGCGCACGCGGCGAGAGCGTATGGAGCCGA
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 30 CCCCAGAAGCCAGGAAGCCCCCGCGCTGGACTGGGGCAGCTTCCCCAGCAGCCA
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SEQ ID NO: 129

35 >gi|1563888|gb|U66199.1|HSU66199 Human fibroblast growth factor homologous factor 3
 (FHF-3) mRNA, complete cds
 ATGGCGGCGCTGGCCAGTAGCCTGATCCGGCAGAAGCGGGAGGTCCGCGAGCCC
 40 GGGGGCAGCCGGCCGGTGTGCGGCGCAGCGGCGCGTGTGTCCCCGCGGCACCAAG
 TCCCTTTGCCAGAAGCAGCTCCTCATCCTGCTGTCCAAGGTGCGACTGTGCGGGG
 GGCGGCCCGCGCGGCCGACCGCGGCCCGGAGCCTCAGCTCAAAGGCATCGTCA
 CCAAAGTGTCTGCCGCCAGGGTTTCTACCTCCAGGCGAATCCCGACGGAAGCAT
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 45 GGCTCCGTGTGGTCAACATCCAGAGCGCCAAGCTGGGTCACTACATGGCCATGA
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 GGAGTGTGTCTTTGAGAATTACTACGTCTGTACGCCTCTGCTCTTACCGCCAGC
 GTCGTTCTGGCCGGGCCTGGTACCTCGGCCTGGACAAGGAGGGGCCAGGTCATGA
 AGGGAAACCGAGTTAAGAAGACCAAGGCAGCTGCCCACTTCTGCCCAAGCTCC

TGGAGGTGGCCATGTACCAGGAGCCTTCTCTCCACAGTGTCCCCGAGGCCTCCCC
TTCCAGTCCCCCTGCCCCCTGA

SEQ ID NO: 130

- 5 >gi|1689891|gb|AA133129.1|AA133129 zm25d01.s1 Stratogene pancreas (#937208) Homo sapiens cDNA clone IMAGE:526657 3' similar to TR:G992563 G992563 ELONGIN A. ;, mRNA sequence
ACCCAGGAAGAAGAAGAAGCTGGATTTACTGGGCGCAGAATGAATTCCAAGAT
GCAGGTGTATTCTGGTTCCAAGTGTGCCTATCTCCCTAAAATGATGACCTTGCAC
10 CAGCAATGCATCCGAGTACTTAAAAACAACATCGATTCAATCTTTGAAGTGGGA
GGAGTCCCATACTCTGTTCTTGAACCCGTTTTGGAGAGGTGTACACCTGATCAGC
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GGAAAGTTCATTGTACCGAGACTTTAAGGAAGAAAGACCCGAAGAGTATGAGT
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15 GGTACTAACAAAGAATATCCAGTTCGCACATGGCCAATTA

SEQ ID NO: 131

- >gi|186385|gb|M63099.1|HUMILRA Human interleukin 1 receptor antagonist (IL1RN) gene, complete cds
20 ATGGAAATCTGCAGAGGCCTCCGCAGTCACCTAATCACTCTCCTCCTCTTCCTGTT
CCATTCAGAGACGATCTGCCGACCCTCTGGGAGAAAATCCAGCAAGATGCAAGC
CTTCAGAATCTGGGATGTTAACCAGAAGACCTTCTATCTGAGGAACAACCAACTA
GTTGCTGGATACTTGCAAGGACCAATGTCAATTTAGAAGAAAAGATAGATGTG
GTACCCATTGAGCCTCATGCTCTGTTCTTGGGAATCCATGGAGGGAAGATGTGCC
25 TGTCTGTGTCAAGTCTGGTGATGAGACCAGACTCCAGCTGGAGGCAGTTAACAT
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AGACAGCGGCCCCACCACCAGTTTTGAGTCTGCCGCCTGCCCCGGTTGGTTCCTC
TGACAGCGATGGAAGCTGACCAGCCCGTCAGCCTACCAATATGCCTGACGAA
GGCGTCATGGTCAACAAATTCTACTTCCAGGAGGACGAGTAG
30

SEQ ID NO: 132

- >gi|186738|gb|M60828.1|HUMKGF Human keratinocyte growth factor mRNA, complete cds
ACGCGCTCACACACAGAGAGAAAATCCTTCTGCCTGTTGATTTATGGAAACAATT
ATGATTCTGCTGGAGAACTTTTCAGCTGAGAAATAGTTTGTAGCTACAGTAGAAA
35 GGCTCAAGTTGCACCAGGCAGACAACAGACATGGAATTCTTATATATCCAGCTGT
TAGCAACAAAACAAAAGTCAAATAGCAAACAGCGTCACAGCAACTGAACTTACT
ACGAACTGTTTTTATGAGGATTTATCAACAGAGTTATTTAAGGAGGAATCCTGTG
TTGTTATCAGGAATAAAAGGATAAGGCTAACAATTTGGAAAGAGCAAGTACTC
TTTCTTAAATCAATCTACAATTCACAGATAGGAAGAGGTCAATGACCTAGGAGTA
40 ACAATCAACTCAAGATTCATTTTCATTATGTTATTCATGAACACCCGGAGCACTA
CACTATAATGCACAAATGGATACTGACATGGATCCTGCCAACTTTGCTCTACAGA
TCATGCTTTCACATTATCTGTCTAGTGGGTACTATATCTTTAGCTTGCAATGACAT
GACTCCAGAGCAAATGGCTACAAATGTGAACTGTTCCAGCCCTGAGCGACACAC
AAGAAGTTATGATTACATGGAAGGAGGGGATATAAGAGTGAGAAGACTCTTCTG
45 TCGAACACAGTGGTACCTGAGGATCGATAAAAGAGGCAAAGTAAAGGGGACCC
AAGAGATGAAGAATAATTACAATATCATGGAAATCAGGACAGTGGCAGTTGGAA
TTGTGGCAATCAAAGGGGTGGAAAGTGAATTCATCTTGCAATGAACAAGGAAG
GAAAACCTCTATGCAAAGAAAGAATGCAATGAAGATTGTAACCTCAAAGAATAA
TTCTGGAAAACCATTACAACACATATGCATCAGCTAAATGGACACACAACGGAG

GGGAAATGTTTGTTCCTTAAATCAAAAAGGGGATTCTGTAAAGAGGAAAAAAAAA
CGAAGAAAGAACAAAAAACAGCCCACTTTCTTCCTATGGCAATAACTTAATTGC
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TTCTTTCTTCTCAAAATTTTCTTTCTTTTATTTTTTAGTAATCAAGAAAGGCTGGA
5 AAAACTACTGAAAAACTGATCAAGCTGGACTTGTGCATTTATGTTTGTTTAAGA
CACTGCATTAAAGAAAGATTTGAAAAGTATACACAAAAATCAGATTTAGTAACT
AAAGGTTGTAAAAAATTGTAAACTGGTGTACAATCATGATGTTAGTAACAGTA
ATTTTTTTCTTAAATTAATTTACCCTTAAGAGTATGTTAGATTTGATTATCTGATA
ATGATTATTTAAATATTCCTATCTGCTTATAAAATGGCTGCTATAATAATAAAT
10 ACAGATGTTGTTATATAAGGTATATCAGACCTACAGGCTTCTGGCAGGATTTGTC
AGATAATCAAGCCACACTAACTATGGAAAATGAGCAGCATTTTAAATGCTTTCTA
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CTATTATGAAAGTCAATAAAATAGATAATTTAACAAAAGTACAGGATTAGAACA
TGCTTATACCTATAAATAAGAACAAAATTTCTAATGCTGCTCAAGTGGAAGGGT
15 ATTGCTAAAAGGATGTTTCCAAAAATCTTGTATATAAGATAGCAACAGTGATTGA
TGATAATACTGTACTTCATCTTACTTGCCACAAAATAACATTTTATAAATCCTCAA
AGTAAAATTGAGAAATCTTTAAGTTTTTTTCAAGTAACATAATCTATCTTTGTATA
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TTTTCTATGGTTACAGCATTAAACTCTATTTTAAGTTGTTTTTGAACTTTATTGTT
20 TTGTTATTTAAGTTTATGTTATTTATAAAAAAAAACCTTAATAAGCTGTATCTGT
TTCATATGCTTTTAATTTTAAAGGAATAACAAAACCTGTCTGGCTCAACGGCAAGT
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ATCCTGGAAGCAGACAAAAATAAGAGCCTGAAGCAATGCTTACAATAGATGTCT
CACACAGAACAATACAAATATGTAAAACTCTTTCACCACATATTCTTGCCAATT
25 AATTGGATCATATAAGTAAATCATTACAAATATAAGTATTTACAGGATTTTAAA
GTTAGAATATATTTGAATGCATGGGTAGAAAATATCATATTTTAAACTATGTAT
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GCACTGAAAGTTGTTTTCTGTAGATGGCAAGAGCACAATGCCCAAAATAGAA
GATGCAGTTAAGAATAAGGGGCCCTGAATGTCATGAAGGCTTGAGGTCAGCCTA
30 CAGATAACAGGATTATTACAAGGATGAATTTCCACTTCAAAGTCTTTCATTGGC
AGATCTTGGTAGCACTTTATATGTTACCAATGGGAGGTCAATATTTATCTAATTT
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CTTTACATAAATAGTATTTGGTAATACATTTATAGATGAGAGTTATATGAAAAGG
CTAGGTCAACAAAAACAATAGATTCATTTAATTTCTGTGGTTGACCTATACGA
35 CCAGGATGTAGAAAAC TAGAAAGAACTGCCCTTCCTCAGATATACTCTGGGAG
AGAGCATGAATGGTATTCTGAACTATCACCTGATTCAAGGACTTTGCTAGCTAGG
TTTTGAGGTCAGGCTTCAGTAACTGTAGTCTTGTGAGCATATTGAGGGCAGAGGA
GGACTTAGTTTTTCATATGTGTTTCCTTAGTGCCTAGCAGACTATCTGTTCATAAT
CAGTTTTTCAGTGTGAATTCAGTGAATGTTTATAGACAAAAGAAAATACACACTAA
40 AACTAATCTTCATTTTAAAGGGTAAACATGACTATACAGAAATTTAAATAGAA
ATAGTGTATATACATATAAAATACAAGCTATGTTAGGACCAAATGCTCTTTGTCT
ATGGAGTTATACTTCCATCAAATTACATAGCAATGCTGAATTAGGCAAAACCAAC
ATTTAGTGGTAAATCCATTCCTGGTAGTATAAGTCACCTAAAAAAGACTTCTAGA
AATATGTACTTTAATTATTTGTTTTTCTCCTATTTTTAAATTTATTATGCAAATTTT
45 AGAAAATAAAATTTGCTCTAGTTACACACCTTTAGAATTCTAGAATATTAATACT
GTAAGGGGCCCTCCATCCCTCTTACTCATTTGTAGTCTAGGAAATTGAGATTTTGAT
ACACCTAAGGTCACGCAGCTGGGTAGATATACAGCTGTCACAAGAGTCTAGATC
AGTTAGCACATGCTTTCTACTCTTCGATTATTAGTATTATTAGCTAATGGTCTTTG
GCATGTTTTTGTTTTTTATTTCTGTTGAGATATAGCCTTTACATTTGTACACAAAT

GTGACTATGTCTTGGCAATGCACTTCATACACAATGACTAATCTATACTGTGATG
ATTTGACTCAAAAGGAGAAAAAGAAATTATGTAGTTTCAATTCTGATTCTTATTC
ACCTTTTGTATGAATGGAAAGCTTTGTGCAAAATATACATATAAGCAGAGTAA
GCCTTTTAAAAATGTTCTTTGAAAGATAAAATTAAATACATGAGTTTCTAACAAAT
5 TAGA

SEQ ID NO: 133

>gi|1399238|gb|U59832.1|HSU59832 Human transcription factor, forkhead related activator
4 (FREAC-4) mRNA, complete cds

10 CGCCGCCACCCGGCAGCCCCGGCGCAGCTCCGGCAGCCGAGTCGCAGCGCCCC
CAGCGTGGCGCCCCCGGCCGGGCTGCCGCCGGGACCCGGGCTGGGGCGCAG
AGGGAGCCCGGAGCCCGGCCGCCCCATGCGCCGCCCGCCGCCGCCGCCACA
GCTATGACCCTGAGCACTGAGATGTCCGATGCCTCTGGCCTCGCCGAGGAAACA
GACATCGACGTGGTGGGGGAGGGCGAGGACGAAGAAGACGAGGAAGAGGAGGA
15 CGACGACGAGGGCGGCGGTGGCGGGCCCCGGCTGGCTGTCCCCGCGCAGCGGCG
GCGGCGGCGGCGCTCGTACGCCGGGGAGGACGAGCTGGAGGATCTGGAGGAGG
AGGAGGACGACGATGACATCCTGCTGGCCCCGCCTGCTGGGGCTCCCCGGCGCC
CCCGGGCCCCGGCCCCGGCGGCGGGGGCAGGAGCCGGTGGGGGCGGCGGCGGCG
GCGGCGCGGGCGGCGGCGGGAGCGCGGGTAGCGGCGCCAAGAACCCGCTGGTG
20 AAGCCGCCCTACTCGTATATCGCGCTCATCACTATGGCCATCCTGCAGAGCCCCA
AGAAGCGGCTGACGCTGAGCGAGATCTGTGAGTTCATCAGCGGCCGCTTCCCCTA
CTACCGGGAGAAGTTCCCCGCCTGGCAGAACAGCATCCGCCACAACCTCTCGCTC
AACGACTGCTTCGTCAAGATCCCCCGCGAGCCCGGCAACCCGGGCAAGGGCAAC
TACTGGACGCTGGACCCGGAGTCCGCCGACATGTTTCGACAACGGCAGCTTCCTGC
25 GCCGGAGGAAGCGCTTCAAGCGGCAGCCGCTGCTCCACCCAACGCCGCGGCCG
CCGAGTCTCTGCTGCTGCGCGGCGCGGGAGCCGCAGGGGGCGCGGGGCGACCCGG
CAGCCGCCCGCCGCGCTCTTCCCGCCCCGCGCCCCCGCCGCCCGCCGCTACGG
CTACGGCCCCCTACGGCTGCGGCTACGGCCTGCAGCTGCCGCTTACGCGCCGCC
TCGGCCCTCTTCGCCGCCGCAGCGGCCGCCGCCGCCGCCGCCGCTTCCACCCGC
30 ACTCGCCCCCGCCGCCGCCGCCACCGCACGGCGCGGCCGCCGAGCTGGCCCCGA
CCGCTTCGGCTACCGGCCGCACCCGCTCGGCGCCGCCCTACCCGGCCCCCTGCC
GGCCTCCGCGGCCAAGGCGGGCGGCCCGGGCGCCTCAGCGCTGGCGCGCTCGCC
CTTCTCCATCGAGAGCATCATCGGGGGCAGCTTGGGCCCCGGCCGCCGCTGCCGCC
GCCGCCGCGCAGGCCGCCGCCGCCGCTCAGGCCTCGCCCTCGCCCTCGCCGGTGG
35 CGGCGCCGCCAGCTCCCGGATCCAGCGGAGGAGGCTGCGCGGCGCAGGCGGCCG
TGGGCCCGGCGGCCGCGCTCACCCGATCCCTCGTGGCCGCCGCGGCCGCCGCCG
CTCCTCAGTCTCCTCGTCCGCCGCTTGGGGACTCTGCACCAAGGGACTGCCCTG
TCCAGTGTCGAGAACTTTACTGCTAGGATTTCCAATTGTTAATAACGCTATGTTA
GCGCGCTCGAGGAAGAAGGTAGGAATCCCGGCTCCTTTTCTCGTCTTGGTGGTTC
40 GGTGTTTTGTTCGCTCCTCCAGGCGCGGCCCTCTCGACCTCGCGCGCCATTTC
GCCGCTGCGAATTCTCGGACAAAACGTCAACAGCCCCGGGCGCGCCTTTTGGCTC
TGCGGGTCCCTCTATTTATGCAAAGCCGACCTATGCTACAGCCCCCAACCCCG
ACCTGGGGTAGGGAGGAAGAGGGTGCCGGGGAAGGGAGTCCGCCCTGTCCAGG
CACTAGAGGCTCCCTTGACGTTTGGCAGATGAAAAACAATAAGCCTTTTTGAGG
45 TGTAGAGATTCTCAGGTCCAGGCGTTAAAAATAATGGTCAAAAGAATAACA
AAAATAGTAAAGGTCTTGAAGAATGCCAGCGAAGCAATTCTTTTTTATTTGAGGA
CACTTGTCTGGTGTACTTTTTTCATGAAAAGGAAAAATGGTTAACATGTTTACACA
AGAAAAAAAGTCAAAATTATCATTTATTTCAACCTGTGTTTGTATCATAACAGA
CGTGTGGATTTTTTTGTACTTACTGCGTATTCTTTACAAGGAGTATTGTAAATTTT

ACTGGCAATTATTATTGTACTATTCTAAATGTAAGATTTTACACTTTTTCAGAAA
TAAAAATGCTTAATTTTCAAAGAAAATTCACCAAAA

SEQ ID NO: 134

5 >gi|181977|gb|M38425.1|HUMEGFR Human EGF receptor (EGFR) gene, 5' end
AAGCTTCCGCGAGTTTCCCAGGCATTTCTCCTCGCGGGACTACCAGGGGTTAGTGG
GACACTTAGCCTCTCTAAAAGCACCTCCACGGCTGTTTGTGTCAAGCCTTTATTCC
AAGAGCTTCACTTTTGC GAAGTAATGTGCTTCACACATTGGCTTCAAAGTACCCA
TGGCTGGTTGCAATAAACATTAAGGAGGCCTGTCTCTGCACCCGGAGTTGGTGCC
10 CTCATTTTCAGATGATTTTCGAGGGTGTGACAAGATCTGAAGGACCCTCGGACTT
TAGAGCACCACTCGGAACGCCTGGCACCCCTGCCGCGCGGGCACGGCGACCTC
CTCAGCTGCCAGGCCAGCCTCTGATCCCCGCGAGGGGTCCCGTAGTGCTGCAGGG
GGAGGCTGGGGACCCGAATAAAGGAGCAGTTTCCCCGTCGGTGCCATTATCCGA
CGCTGGCTCTAAGGCTCGGCCAGTCTGTCTAAAGCTGGTACAAGTTTGCTTTGTA
15 AAACAAAAGAAGGGAAAGGGGAAGGGGACCCTGGCACAGATTTGGCTCGACC
TGGACATAGGCTGGGCTGCAAGTCCGCGGGGACCGGGTCCAGAGGGGCAGTGCT
GGGAACGCCCCCTCTCGGAAATTAACCTCCTCAGGGCACCGCTCCCCCTCCATGCGC
CGCCCCACTCCCGCCGGAGACTAGGTCCCGCGGGGGGCCACCGTGTCACCGCCTC
GCGGCCGCTGGCCTTGGGTCCCCGCTGCTGGTTCTCCTCCCTCCTCCTCGCATTCT
20 CCTCCTCCTCTGCTCCTCCCGATCCCTCCTCCGCCGCTGGTCCCTCCTCCTCCCG
CCCTGCCTCCCGCGCCTCGGCCCGCGCGAGCTAGACGTCCGGGCAGCCCCCGGCG
CAGCGCGGCCGAGCAGCCTCCTCCCCCGCACGGTGTGAGCGCCCGCCGCGCC
GAGGCGGCCGGAGTCCCGAGCTAGCCCCGCGGCCGCGCCGCCCAGACCGGACG
ACAGGCCACCTCGTCGCGTCCGCCCCGAGTCCCCGCCTCGCCGCCAACGCCACAAC
25 CACCGCGCACGGCCCCCTGACTCCGTCCAGTATTGATCGGGAGAGCCGGAGCGA
GCTCTTCGGGGAGCAGCGATGCGACCCTCCGGGACGGCCGGGGCAGCGCTCCTG
GCGCTGCTGGCTGCGCTCTGCCCCGGCGAGTCGGGCTCTGGAGGAAAAGAAAGGT
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GCCCCGCCAACCGCACCGCGCACCGGCTTCGCCCGCGCCCCCGCCGCTCCTTTCC
30 TGTTTCCTTGAGATCACGTGCGCCGCGACCGGGACCGCGGGAGGAACGGGACG
TTTCGTTCTTCGGCCGGGAGAGTCTGGGGCGGGCGGAGGAGGAGACGCGTGGGA
CACCGGGCTGCAGGCCAGGCGGGGAACGGCCGCGGGGACCTCCGGCGCCCCGAA
CCGCTCCCAACTTTCTTCCCTCACTTTCCCCGCCAGCTGCGCAGGATCGGCGTCA
CTGGGGCGAAACCGGGTGTGGTGGGGCGCCTGGGGCCGGGGTCCCGCACGGGCT
35 CCCCCGCGCTGTCTTCCAGGGCGCGACGGGGTCTGGCGCGCACCCGAGGGCCG
CTGCCCACCCGCCGAGACTGCCTGTTTAGGGAAGCTGAGGAAGGAACCAAAAAA
TACAGCCTCCGCTCGGACCCCGCGGGACAGGCGGCTTTCTGAGAGGACCTCCCCG
CCTCCGCGCTCCGCGCAGGTCTCAAACCTGAAGCCGGCGCCCGCCAGCCTGGCCCC
GGCCCCCTCTCCAGGTCCCCGCGATCCTCGTTCCCCAGTGTGGAGTCGCAGCCTCG
40 ACCTGGGAGCTGGGAGAACTCGTCTACCACCACTGCGGCTCCCGGGGAGGGGT
GGTGCTGGCGGCGGTTAGTTTCTCGTTGGCAAAAGGCAGGTGGGGTCCGACCC
GCCCTTGGGCGCAGACCCCGGCCGCTCGCCTCGCCCGGTGCGCCCTCGTCTTGC
CTATCCAAGAGTGCCCCCACTCCCGGGACCCAGCTCCCTCCGCGCCCGCGCCG
AAAGCCCCAGGCTCTCCTTCGATGGCCGCCTCGCGGAGACGTCCGGGTCTGCTCC
45 ACCTGCAGCCCTTCGGTCGCGCCTGGGCTTCGCGGTGGAGCGGGACGCGGCTGTC
CGGCCACTGCAGGGGGGGATCGCGGGACTCTTGAGCGGAAGCCCCGGAAGCAGA
GCTCATCCTGGCCAACACCATGGTGTTTCAAATGGGGCTCACAGCAAATTTCTC
CTCAAAACCCGGAGACTTTCTTTCTTGATGTCTTTTTTGCTGTTTGAAGAATTT
GAGCCAACCAAAATATTAAACCTGTCTTACACACACACACACACACACACAC

ACACACACCGGATTGCTGTCCCTGGTTCAAGTGTGCCAAGTGTGCAGAAGAACAT
GAGCGAGTCTGGCTTCGTGACTACCGACCATAAACCCACTTGACAGGGGAAACA
TGCCTTGGAAGGTTTAATTGCACAATCCAACCTTGACTGCGCGGGTTCCAAGAG
CCAGGCCCGTACTTGCTGTTGATGTCATTGGCTTGGGGAGTTGGGGTTTGGTGCC
5 CAGCGCGGTCGTTGGGGGAGGGGCGGAAGGCATAGAACAGTGGTTCCTGCGCC
CTTCTGCACATTGGAATTACCTGGGATTAATAAAAAAAAAAATCAAAAACAAAACC
AGTGTCTCGTCCCGCCCCCAGACATTCTGATTTAATTGGCATGGGGCAAGACCTG
GACTTGGGATTTTTTTTAATGCTCTTCATGTGATCTGTTGGGCAGCCAGATTTGGG
GATCACTAGACGGAAGAAGGATTGTTAAAGTCTCCGGAGATGTTACTTGCCAAT
10 GCTAAGAGCTCTTTGAGACATCTGGAATTGTTACAATATTGCCAAATATAGGAAA
GAGGGAAAAGGTAGAGTGTGATTCCAATAATAAAGGATTCCGCTTTTCATTGAA
GGAAGTGGTGGAAGGTTTCTTCTCTGCTAGACCTGCAGGCCCGTCCTGCCTGCC
TGGGGCGCCCGGGAGACGCGGGCCTGCTCCGGAGACTGCTGACTGCCGGTCTTG
TTAGTCAGGTGTCAGCCCTGTCTCTGCCGAAGAGACTCTCTCTTTATTTTAAATTA
15 AACCTCAGAGCACCACCAAAGCATCACTTTTCTCCCTCCATTGGTGTTCTCATTC
TTTGATGTTACTTGTGTTGAACACCACTATTAGTAGTTGGAGATTTGTTCTGAGAA
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CATAAAAGACTGGATTTTCAGGGGCAAATTATTAATAAGGAGATGAGCTCTTTT
20 AACAGAAATTTGTTTAAGGCCTGTGTCTATCAAATTCAGTGGATTTTATTCAAGA
TGCACTTTGTGTTAGTGGGAGTTTTGTTTGGTTCTGGGACATGCTAACTTCTAGACT
TGCTGCTCTTAGAGGTAATGACTGCCAGACACCATTTTCATGAGTCCTAATCCCCA
CATTAAAGCATAAGAGGTGCACACTCTCCTCCTATGGGGGAAACTGAGGTACGAA
GAACTAAAGTGACTTTCCACAGCTGGTGGGAGGCAGACGGGAAATTCACACCA
25 GGGGCTTCCAACCTCAGATCCCTCTCTCAACTTCCAACTCCACTGCCTTGTCGA
GTTCTGGTTTCAGGAGATCCAAATCAGGTGTGTGCAAATGTCTAATGTCAGAGCT
GGCAAGGGGAAAGGGCCAGGGAGCCGGCTCATGACGATGAGCCTGTCTGAAGC
TT

30 SEQ ID NO: 135

>gi|2162425|gb|AA448755.1|AA448755 zx10d10.r1 Soares_total_fetus_Nb2HF8_9w Homo sapiens cDNA clone IMAGE:786067 5' similar to gb:S78187 M-PHASE INDUCER PHOSPHATASE 2 (HUMAN);, mRNA sequence

35 CAGTCTGTTGAGTTAGTTAAGTTGGGTAAATACCAGCTTAAAGGCAGTATTTTGT
GTCCTCCAGGAGCTTCTTGTTCCTTGTTAGGGTTAACCCTTCATCTTCCTGTGTC
CTGAAACGCTCCTTTGTGTGTGTGTCAGCTGAGGCTGGGGGAGAGCCGTGGTCCC
TGAGGATGGGTCAGAGCTAAACTCCTTCCTGGCCTGAGAGTCAGCTCTCTGCCCT
GTGTACTTCCCGGGCCAGGGCTGCCCTAATCTCTGTAGGAACCGTGGTATGTCT
GCCATGTTGCCCTTTCTCTTTTCCCTTTCTGTCCCACCATAACGAGCACCTCCA
40 GCCTGAACAGAAGCTCTTACTCTTTCTATTTTCAGTGTTACCTGTGTGCTTGGTCT
GTTTGACTTTACGC

SEQ ID NO: 136

45 >gi|189389|gb|M97016.1|HUMOP2A Homo sapiens osteogenic protein-2 (OP-2) mRNA, complete cds

CCACAGTGGCGCCGGCAGAGCAGGAGTGGCTGGAGGAGCTGTGGTTGGAGCAGG
AGGTGGCACGGCAGGGCTGGAGGGCTCCCTATGAGTGGCGGAGACGGCCCAGGA
GGCGCTGGAGCAACAGCTCCCACACCGCACCAAGCGGTGGCTGCAGGAGCTCGC
CCATCGCCCCTGCGCTGCTCGGACCGCGGCCACAGCCGGAAGTGGCGGGTACGGC

GCGACAGACGGATTGGCCGAGAGTCCCAGTCCGCAGAGTAGCCCCGGCCTCGA
 GCGGTGGCGTCCCGGTCCTCTCCGTCCAGGAGCCAGGACAGGTGTCGCGCGGC
 GGGGCTCCAGGGACCGCGCCTGAGGCCGGCTGCCCCGCCGTCCCGCCCCGCCCC
 GCGCCCCGCCGCCGCCGAGCCAGCCTCCTTGCCGTCGGGGCGTCCCCAGGCCC
 5 TGGGTCGGCCGCGGAGCCGATGCGCGCCCGCTGAGCGCCCCAGCTGAGCGCCCC
 CGGCCTGCCATGACCGCGCTCCCCGGCCCGCTCTGGCTCCTGGGCCTGGCGCTAT
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 10 CGCGTCCGCGCCGCTCTTCATGCTGGACCTGTACCACGCCATGGCCGGCGACGAC
 GACGAGGACGGCGCGCCCGCGGAGCGGCGCCTGGGCCGCGCCGACCTGGTCATG
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 TGGAAGGAGTTCCGCTTTGACCTGACCCAGATCCCGGCTGGGGAGGCGGTCACA
 GCTGCGGAGTTCCGGATTTACAAGGTGCCAGCATCCACCTGCTCAACAGGACCC
 15 TCCACGTCAGCATGTTCCAGGTGGTCCAGGAGCAGTCCAACAGGGAGTCTGACTT
 GTTCTTTTTGGATCTTCAGACGCTCCGAGCTGGAGACGAGGGCTGGCTGGTGTCTG
 GATGTCACAGCAGCCAGTGACTGCTGGTTGCTGAAGCGTCACAAGGACCTGGGA
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 20 TCAGGGCCAGTCCGAGTCCCATCCGCACCCCTCGGGCAGTGAGGCCACTGAGGA
 GGAGGCAGCCGAAGAAAAGCAACGAGCTGCCGCAGGCCAACCAGACTCCAGGG
 ATCTTTGATGACGTCCACGGCTCCACGGCCGGCAGGTCTGCCGTCGGCACGAGC
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 CTACTCGGCCTATTACTGTGAGGGGGAGTGCTCCTTCCCACTGGACTCCTGCATG
 25 AATGCCACCAACCACGCCATCCTGCAGTCCCTGGTGCACCTGATGAAGCCAAAC
 GCAGTCCCCAAGGCGTGCTGTGCACCCACCAAGCTGAGCGCCACCTCTGTGCTCT
 ACTATGACAGCAGCAACAACGTCATCCTGCGCAAGCACCGCAACATGGTGGTCA
 AGGCCTGCGGCTGCCACTGAGTCAGCCCGCCAGCCCTACTGCAGCCACCCTTCT
 CATCTGGATCGGGCCCTGCAGAGGCAGAAAACCCTTAAATGCTGTACAGCTCA
 30 AGCAGGAGTGTACAGGGGCCCTCACTCTCTGTGCCTACTTCCTGTCAGG

SEQ ID NO: 137

>gi|181979|gb|M29366.1|HUMEGFRBB3 Human epidermal growth factor receptor (ERBB3) mRNA, complete cds

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 CCCGGGCCGGACTTGGCTGGGCTCCCTTACCCCTCTGCGGAGTCATGAGGGCGAA
 CGACGCTCTGCAGGTGCTGGGCTTGCTTTTTCAGCCTGGCCCCGGGGCTCCGAGGTG
 GGCAACTCTCAGGCAGTGTGTCCTGGGACTCTGAATGGCCTGAGTGTGACCGGCG
 ATGCTGAGAACCAATACCAGACACTGTACAAGCTCTACGAGAGGTGTGAGGTGG
 40 TGATGGGGAACCTTGAGATTGTGCTCACGGGACACAATGCCGACCTCTCCTTCT
 GCAGTGGATTTCGAGAAGTGACAGGCTATGTCCTCGTGGCCATGAATGAATTCTCT
 ACTCTACCATTGCCCAACCTCCGCGTGGTGCAGGGGACCCAGGTCTACGATGGGA
 AGTTTGCCATCTTCGTCATGTTGAACTATAACACCAACTCCAGCCACGCTCTGCG
 CCAGCTCCGCTTGACTCAGCTCACCAGATTCTGTCAGGGGGTGTTTATATTGAG
 45 AAGAACGATAAGCTTTGTACATGGACACAATTGACTGGAGGGACATCGTGAGG
 GACCGAGATGCTGAGATAGTGGTGAAGGACAATGGCAGAAGCTGTCCCCCTGT
 CATGAGGTTTGCAAGGGGGCGATGCTGGGGTCTGGATCAGAAGACTGCCAGACA
 TTGACCAAGACCATCTGTGCTCCTCAGTGTAATGGTCACTGCTTTGGGCCCCAAC
 CCAACCAGTGCTGCCATGATGAGTGTGCCGGGGGCTGCTCAGGCCCTCAGGACA

CAGACTGCTTTGCCTGCCGGCACTTCAATGACAGTGGAGCCTGTGTACCTCGCTG
TCCACAGCCTCTTGTCTACAACAAGCTAACTTTCCAGCTGGAACCCAATCCCCAC
ACCAAGTATCAGTATGGAGGAGTTTGTGTAGCCAGCTGTCCCCATAACTTTGTGG
TGGATCAAACATCCTGTGTGAGGGCCTGTCCTCCTGACAAGATGGAAGTAGATAA
5 AAATGGGCTCAAGATGTGTGAGCCTTGTGGGGGACTATGTCCCAAAGCCTGTGA
GGGAACAGGCTCTGGGAGCCGCTTCCAGACTGTGGACTCGAGCAACATTGATGG
ATTTGTGAACTGCACCAAGATCCTGGGCAACCTGGACTTTCTGATCACCGGCCTC
AATGGAGACCCCTGGCACAAGATCCCTGCCCTGGACCCAGAGAAGCTCAATGTC
TTCCGGACAGTACGGGAGATCACAGGTTACCTGAACATCCAGTCCTGGCCGCCCC
10 ACATGCACAACCTTCAGTGTTTTTTCCAAATTTGACAACCATTTGGAGGCAGAAGCCT
CTACAACCGGGGCTTCTCATTGTTGATCATGAAGAACTTGAATGTCACATCTCTG
GGCTTCCGATCCCTGAAGGAAATTAGTGCTGGGCGTATCTATATAAGTGCCAATA
GGCAGCTCTGCTACCACCACTCTTTGAACTGGACCAAGGTGCTTCGGGGGCGCTAC
GGAAGAGCGACTAGACATCAAGCATAATCGGCCGCGCAGAGACTGCGTGCCAGA
15 GGGCAAAGTGTGTGACCCACTGTGCTCCTCTGGGGGATGCTGGGGGCCAGGCCCT
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20 AGCTGCCCCCATGGAGTCCTAGGTGCCAAGGGCCCAATCTACAAGTACCCAGAT
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25 GCGATACTTGGAACGGGGTGAGAGCATAGAGCCTCTGGACCCCAAGTGAGAAGGC
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30 CCCACATTGTAAGGCTGCTGGGACTATGCCCAGGGTCATCTCTGCAGCTTGTAC
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CTGGGGGCCACAGCTGCTGCTCAACTGGGGAGTACAAATTGCCAAGGGAATGTAC
TACCTTGAGGAACATGGTATGGTGCATAGAAACCTGGCTGCCCAGAACGTGCTA
CTCAAGTCACCCAGTCAGGTTGAGGTGAGATTTTGGTGTGGCTGACCTGCTGC
35 CTCCTGATGATAAGCAGCTGCTATACAGTGAGGCCAAGACTCCAATTAAGTGGAT
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40 ATGAGAACATTCGCCCAACCTTTAAAGAACTAGCCAATGAGTTCACCAGGATGG
CCCGAGACCCACCGGTATCTGGTCATAAAGAGAGAGAGTGGGCCTGGAATAG
CCCCTGGGCCAGAGCCCCATGGTCTGACAAACAAGAAGCTAGAGGAAGTAGAGC
TGGAGCCAGAAGTAGACCTAGACCTAGACTTGGAAAGCAGAGGAGGACAACCTGG
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45 ACGTGGGAGCCAGAGCCTTTTAAAGTCCATCATCTGGATACATGCCCATGAACCAG
GGTAATCTTGGGGAGTCTTGCCAGGAGTCTGCAGTTTCTGGGAGCAGTGAACGGT
GCCCCCGTCCAGTCTCTCTACACCCAATGCCACGGGGATGCCTGGCATCAGAGTC
ATCAGAGGGGCATGTAACAGGCTCTGAGGCTGAGCTCCAGGAGAAAGTGTCAAT
GTGTAGAAGCCGGAGCAGGAGCCGGAGCCACGGCCACGCGGAGATAGCGCCT

ACCATTCCCAGCGCCACAGTCTGCTGACTCCTGTTACCCCACTCTCCCCACCCGG
 GTTAGAGGAAGAGGATGTCAACGGTTATGTCATGCCAGATACACACCTCAAAGG
 TACTCCCTCCTCCCGGGAAGGCACCCCTTCTTCAGTGGGTCTTAGTTCTGTCTGG
 GTACTGAAGAAGAAGATGAAGATGAGGAGTATGAATACATGAACCGGAGGAGA
 5 AGGCACAGTCCACCTCATCCCCCTAGGCCAAGTTCCTTGAGGAGCTGGGTATG
 AGTACATGGATGTGGGGTCAGACCTCAGTGCCTCTCTGGGCAGCACACAGAGTT
 GCCCACTCCACCCTGTACCCATCATGCCCACTGCAGGCACAACCTCCAGATGAAGA
 CTATGAATATATGAATCGGCAACGAGATGGAGGTGGTCCTGGGGGTGATTATGC
 AGCCATGGGGGCCTGCCCAGCATCTGAGCAAGGGTATGAAGAGATGAGAGCTTT
 10 TCAGGGGCCTGGACATCAGGCCCCCATGTCCATTATGCCCGCCTAAAACTCTA
 CGTAGCTTAGAGGCTACAGACTCTGCCTTTGATAACCCTGATTACTGGCATAGCA
 GGCTTTTCCCAAGGCTAATGCCCAGAGAACGTAACCTCCTGCTCCCTGTGGCACT
 CAGGGAGCATTTAATGGCAGCTAGTGCCTTTAGAGGGTACCGTCTTCTCCCTATT
 CCCTCTCTCTCCAGGTCCCAGCCCCTTTTCCCCAGTCCCAGACAATTCCATTCAA
 15 TCTTTGGAGGCTTTTAAACATTTTGACACAAAATTCTTATGGTATGTAGCCAGCTG
 TGCATTTCTTCTCTTTCCCAACCCAGGAAAGGTTTTCCTTATTTTGTGTGCTTTC
 CCAGTCCCATTCTCAGCTTCTTCACAGGCACTCCTGGAGATATGAAGGATTACT
 CTCCATATCCCTTCTCTCAGGCTCTTGACTACTTGGAAGTGGCTCTTATGTGTG
 CCTTTGTTTCCCATCAGACTGTCAAGAAGAGGAAAGGGAGGAAACCTAGCAGAG
 20 GAAAGTGTAATTTTGGTTTATGACTCTTAACCCCTAGAAAGACAGAAGCTTAAA
 ATCTGTGAAGAAAGAGGTTAGGAGTAGATATTGATTACTATCATAATTCAGCACT
 TAACTATGAGCCAGGCATCATACTAACTTCACCTACATTATCTCACTTAGTCCTT
 TATCATCCTTAAACAATTCTGTGACATACATATTATCTCATTTTACACAAAGGG
 AAGTCGGGCATGGTGGCTCATGCCTGTAATCTCAGCACTTTGGGAGGCTGAGGCA
 25 GAAGGATTACCTGAGGCAAGGAGTTTGAGACCAGCTTAGCCAACATAGTAAGAC
 CCCCATCTCTTT

SEQ ID NO: 138

>gi|1123184|gb|H98534.1|H98534 yv97d06.s1 Soares melanocyte 2NbHM Homo sapiens
 30 cDNA clone IMAGE:250667 3', mRNA sequence
 ATCTAACATTATTGCTTTAGGAAAGTATTTCCCTGAACCAAGAATACAATGCTAA
 TTGCATAAAAACATACACATATAAAAAGTAGTTCTCCATTTTCCCAGGAAAAAAT
 CCAAGTATAAAGTCTAGAATAGTCAAGTTTCTTATTTTATTATAATTAAAGTCTT
 GGTCATTTTCAATTATTAGCTCTGCAACTTACATATTTAAATTAAGAAACGTTATT
 35 AGACAACNGTTACAATTTATAAATGTAAGGTGCCATTATTGAGTAAATATATTCC
 TCCAAGAGTGGATGTGNCCCTTCTCCCANCACTAATGAAGCAGCAACATTAGGT
 TAAATTTATTAGGAGATGATACACTGGCTGNAAACGCTAATTCNCCTTCTCCAAC
 CCAAG

40 SEQ ID NO: 139

>gi|1813881|dbj|D49728.1|HUMNAK1 Human NAK1 mRNA for DNA binding protein,
 complete cds
 CGAACTTGGGGGGAGTGCACAGAAGAACTTCGGGAGCGCACGCGGGACCAGGG
 ACCAGGCTGAGACTCGGGGCGCCAGTCCGGGCAGGGGCAGCGGGAGCCGGCCG
 45 GAGATGCCCTGTATCCAAGCCCAATATGGGACACCAGCACCGAGTCCGGGACCC
 CGTGACCACCTGGCAAGCGACCCCTGACCCCTGAGTTCATCAAGCCCACCATGG
 ACCTGGCCAGCCCCGAGGCAGCCCCGCTGCCCCCACTGCCCTGCCAGCTTCAG
 CACCTTCATGGACGGCTACACAGGAGAGTTTGACACCTTCCTCTACCAGCTGCCA
 GGAACAGTCCAGCCATGCTCCTCAGCCTCCTCCTCGGCCCTCTCCACATCCTCGTC

CTCAGCCACCTCCCCTGCCTCTGCTTCCTTCAAGTTCGAGGACTTCCAGGTGTACG
 GCTGCTACCCCGGCCCTGAGCGGCCAGTGGATGAGGCCCTGTCTCCAGTGG
 CTCTGACTACTATGGCAGCCCCTGCTCGGCCCGTCGCCCTCCACGCCAGCTTC
 CAGCCGCCCCAGCTCTCTCCCTGGGATGGCTCCTTCGGCCACTTCTCGCCCAGCC
 5 AGACTTACGAAGGCCTGCGGGCATGGACAGAGCAGCTGCCCAAAGCCTCTGGGC
 CCCCACAGCCTCCAGCCTTCTTTTCTTCAAGTCTCCACCGGCCCCAGCCCCAGC
 CTGGCCCAGAGCCCCCTGAAGTTGTTCCCTCACAGGCCACCCACCAGCTGGGGG
 AGGGAGAGAGCTATTCCATGCCTACGGCCTTCCCAGGTTTGGCACCCACTTCTCC
 ACACCTTGAGGGCTCGGGGATACTGGATACACCCGTGACCTCAACCAAGGCCCCG
 10 GAGCGGGGCCCCAGGTGGAAGTGAAGGCCGCTGTGCTGTGTGTGGGGACAACGC
 TTCATGCCAGCATTATGGTGTCCGCACATGTGAGGGCTGCAAGGGCTTCTTCAAG
 CGCACAGTGCAGAAAAACGCCAAGTACATCTGCCTGGCTAACAAGGACTGCCCT
 GTGGACAAGAGGCGGCGAAACCGCTGCCAGTTCTGCCGCTTCCAGAAGTGCCTG
 GCGGTGGGCATGGTGAAGGAAGTTGTCCGAACAGACAGCCTGAAGGGGCGGCG
 15 GGGCCGGCTACCTTCAAAACCCAAGCAGCCCCCAGATGCCTCCCCTGCCAATCTC
 CTCACTTCCCTGGTCCGTGCACACCTGGACTCAGGGCCCAGCACTGCCAACTGG
 ACTACTCCAAGTTCCAGGAGCTGGTGCTGCCCCACTTTGGGAAGGAAGATGCTGG
 GGATGTACAGCAGTTCTACGACCTGCTCTCCGGTTCTCTGGAGGTCATCCGCAAG
 TGGGCGGAGAAGATCCCTGGCTTTGCTGAGCTGTCACCGGCTGACCAGGACCTGT
 20 TGCTGGAGTCGGCCTTCTGGAGCTCTTCATCCTCCGCCTGGCGTACAGGTCTAA
 GCCAGGCGAGGGCAAGCTCATCTTCTGCTCAGGCCTGGTGCTACACCGGCTGCAG
 TGTGCCCCGTGGCTTCGGGGACTGGATTGACAGTATCCTGGCCTTCTCAAGGTCCC
 TGCACAGCTTGCTTGTGATGTCCCTGCCTTCGCCTGCCTCTCTGCCCTTGTCTC
 ATCACCGACCGGCATGGGCTGCAGGAGCCGCGGCGGGTGGAGGAGCTGCAGAAC
 25 CGCATCGCCAGCTGCCTGAAGGAGCACGTGGCAGCTGTGGCGGGCGAGCCCCAG
 CCAGCCAGCTGCCTGTACGTCTGTTGGGCAAACTGCCCGAGCTGCGGACCCTGT
 GCACCCAGGGCCTGCAGCGCATCTTCTACCTCAAGCTGGAGGACTTGGTGCCCCC
 TCCACCCATCATTGACAAGATCTTCATGGACACGCTGCCCTTCTGACCCCTGCCT
 GCCTGGGAACACGTGTGCACATGCGCACTCTCTCATATGCCACCCCATGTGCCTT
 30 TAGTCCACGGACCCCAGAGCACCCCAAGCCTGGGCTTAGCTGCAGAACAGAGG
 GACCTGCTCACCTGCCCAAAGGGGATGAAGGGAGGGAGGCTCAAGGCCCTTGGG
 GGAGGGGGATGCCTTCATGGGGGTGACCCACGATGTGTTCTTATCCCCCCCCGCT
 GGCCACCGGCCTTTATGTTTTTTGTAAGATAAACCGTTTTTAACACATAGCGCCGT
 GCTGTAAATAAGCCCCAGTACTGCTGTAAATAACAGGAAGAAAGAGCTTGAGGTGG
 35 GAGCGGGCTGGGAGGAAGGGATGGGCCCCGGCCTTCTGGGCAGCCTTTCCAGC
 CTCCTGCTGGGCTCTCTCTTCTACCTCCTTCCACATGTACATGTACATAAACTG
 TCACTCTAGGAAGAAGACAAATGACAGATTCTGACCATTATATTTGTGTATTTT
 CCAGGATTTATAGTATGTGACTTTTCTGATTAATATATTTAATATATTGAATAAAA
 AATAGACATGTAGTTGG

40

SEQ ID NO: 140

>gi|178049|gb|M93415.1|HUMACTIIA Human activin type II receptor mRNA, complete cds
 GGGGCGGCCCTTCCCCGCGCCGACGCCCTCGCCGCCACCGCCGCGAGCTCGG
 CCGCCAGTGGTCTCGGACTTTAGGTGTCTGGGTTGAAGGAGGTTTGTCTCCGAG
 45 GAAGACCCAGGGAAGTGGATATCTAGCGAGAACTTCCTCCGATTCCCCGGCGC
 CTCGGGAAAAATGGGAGCTGCTGCAAAGTTGGCGTTTGCCGTCTTCTTATCTCCT
 GTTCTTCAGGTGCTATACTTGGTAGATCAGAACTCAGGAGTGTCTTTTCTTTAAT
 GCTAATTGGGAAAAAGACAGAACCAATCAAACCTGGTGTGAACCGTGTTATGGT
 GACAAAGATAAACGGCGGCATTGTTTTGCTACCTGGAAGAATATTTCTGGTTCCA

TTGAAATAGTGAAACAAGGTTGTTGGCTGGATGATATCAACTGCTATGACAGGA
 CTGATTGTGTAGAAAAAAGACAGCCCTGAAGTATATTTTTGTTGCTGTGAGGG
 CAATATGTGTAATGAAAAGTTTTCTTATTTTCCGGAGATGGAAGTCACACAGCCC
 ACTTCAAATCCAGTTACACCTAAGCCACCCTATTACAACATCCTGCTCTATTCCTT
 5 GGTGCCACTTATGTTAATTGCGGGGATTGTCATTTGTGCATTTTGGGTGTACAGG
 CATCACAAGATGGCCTACCCTCCTGTACTTGTTCCTCAACTCAAGACCCAGGACCAC
 CCCCACCTTCTCCATTACTAGGTTTGA AACCACTGCAGTTATTAGAAGTGAAAGC
 AAGGGGAAGATTTGGTTGTGTCTGGAAAGCCCAGTTGCTTAACGAATATGTGGCT
 GTCAAAATATTTCCAATACAGGACAAACAGTCATGGCAAAATGAATACGAAGTC
 10 TACAGTTTGCCTGGAATGAAGCATGAGAACATATTACAGTTCATTGGTGCAGAAA
 AACGAGGCACCAAGTGTGATGTGGATCTTTGGCTGATCACAGCATTTTCATGAAAA
 GGGTTCACTATCAGACTTTCTTAAGGCTAATGTGGTCTCTTGAATGAACTGTGT
 CATATTGCAGAAACCATGGCTAGAGGATTGGCATATTTACATGAGGATATACCTG
 GCCTAAAAGATGGCCACAAACCTGCCATATCTCACAGGGACATCAAAAAGTAAAA
 15 ATGTGCTGTTGAAAAACAACCTGACAGCTTGCATTGCTGACTTTGGGTGGCCTT
 AAAATTTGAGGCTGGCAAGTCTGCAGGCGATACCCATGGACAGGTTGGTACCCG
 GAGGTACATGGCTCCAGAGGTATTAGAGGGTGCTATAAACTTCCAAAGGGATGC
 ATTTTGTAGGATAGATATGTATGCCATGGGATTAGTCCTATGGGAAGTGGCTTCT
 CGCTGTACTGCTGCAGATGGACCTGTAGATGAATACATGTTGCCATTTGAGGAGG
 20 AAATTGGCCAGCATCCATCTCTTGAAGACATGCAGGAAGTTGTTGTGCATAAAAA
 AAAGAGGCCTGTTTTAAGAGATTATTGGCAGAAACATGCTGGAATGGCAATGCT
 CTGTGAAACCATTGAAGAATGTTGGGATCACGACGCAGAAGCCAGGTTATCAGC
 TGGATGTGTAGGTGAAAGAATTACCCAGATGCAGAGACTAACAAATATTATTAC
 CACAGAGGACATTGTAACAGTGGTCACAATGGTGACAAATGTTGACTTTCCCTCCC
 25 AAAGAATCTAGTCTATGATGGTTGCGCCATCTGTGCACACTAAGAAATGGGACTC
 TGAAGTGGAGCTGCTAAGCTAAAGAAACTGCTTACAGTTTATTTTCTGTGTAAAA
 TGAGTAGGATGTCTCTTGGAAATGTTAAGAAAGAAGACCCTTTGTGAAAAATGT
 TGCTCTGGGAGACTTACTGCATTGCCGACAGCACAGATGTGAAGGACATGAGAC
 TAAGAGAAACCTTGCAAACCTCTATAAAGAAACTTTTGAAAAAGTGTACATGAAG
 30 AATGTAGCCCTCTCCAAATCAAGGATCTTTTGGACCTGGCTAATGGAGTGTGTA
 AAAGTACATCAGATTTCTTAATGTCTGTCAGAAGACACTAATTCCTTAAATGAA
 CTACTGCTATTTTTTTTAAATCAAAAACCTTTTCATTTTCAAGATTTTAAAAAGGGTAA
 CTTGTTTTTATTGCATTTGCTGTTGTTTCTATAAATGACTATTGTAATGCCAATAT
 GACACAGCTTCTGAAATGTTTAGTGTGCTGCTGTTCTGTGTACATAAAGTCATCAA
 35 AGTGGGGTACAGTAAAGAGGCTTCCAAGCATTACTTTAACCTCCCTCAACAAGGT
 ATACCTCAGTTCCACGGTTGCTAAATTATAAAATTGAAAACACTAACAAAATTTG
 AATAATAAATCGATCCATGTTTCCC

SEQ ID NO: 141

40 >gi|2162949|gb|AA448929.1|AA448929 zx05d04.r1 Soares_total_fetus_Nb2HF8_9w Homo
 sapiens cDNA clone IMAGE:785575 5' similar to gb:U05875 INTERFERON-GAMMA
 RECEPTOR BETA CHAIN PRECURSOR (HUMAN);, mRNA sequence
 AACATATCTTGCTACGAAACAATGGCAGATGCTCCACTGAGCTTCAGCAAGTCAT
 CCTGATCTCCGTGGGAACATTTTCGTTGCTGTGCGGTGCTGGCAGGAGCCTGTTTCT
 45 TCCTGGTCTGAAATATAGAGGCCTGATTAAATACTGGTTTCACACTCCACCAAG
 CATCCCATTACAGATAGAAGAGTATTTAAAAGACCCAACTCAGCCCATCTTAGAG
 GCCTTGGACAAGGACAGCTCACCAAAGGATGACGTCTGGGACTCTGTGTCCAT

SEQ ID NO: 142

>gi|2216790|gb|AA486626.1|AA486626 ab16a03.r1 Stratagene lung (#937210) Homo sapiens cDNA clone IMAGE:840940 5' similar to gb:Y00345_cds1 POLYADENYLATE-BINDING PROTEIN (HUMAN);, mRNA sequence

5 GCCGCTCCTTGGGCTACGCGTATGTGAACTTCCAGCAGCCGGCGGATCCGGACGT
GCATTTGGACACCATGAATTTTATGTTATAAAGGGCAAGCCAGTACGCATCATG
TGGTCTCAGCGTGATCCATCACTTCGCAAAAGTGGAGTAGGCAACATATTCATTA
AAAATCTGGACAAATCCATTGATAATAAAGCACTGTATGATACATTTTCTGCTTT
10 TGGTAACATCCTTTTCATGTAAGGTGGTTTGTGATGAAAATGGTTCCAAGGGCTAT
GGATTTGTACACTTTGAGACGCAGGAAGCAGCTGAAAGAGCTATTGAAAAAATG
AATGGAATGCTCCTAAATGATCGCAAAGTATTTGTTGGACGATTAAAGTCTCGTA
AAGAACGAGAAGCTGAACTTGGAGCTAGGGCAAAGAATTCCACAATGTTTACA
TC

15 SEQ ID NO: 143

>gi|189713|gb|M21571.1|HUMPDGFA1 Human platelet-derived growth factor (PDGFA) A chain gene, exon 1

GAGGGAGGGGCGCGGAGCCCCGGCGCGGAGCCGGGCGCGGGGCTTTGATGGATT
TAGCTGCTTGC GCGAGCGCGTGTGTGCTCCCTGCCGCAGCGGCGGCGCCCGGGCC
20 CTGCCGGGTCCGCACGAACCCCGAGCGCTTCCGAGGTGCGGGTCCCAGGCCCGG
AATCCGGGGGAGGCGGGGGGGGGGGGGCGGGGGCGGGGGCGGGGGAGGGGCG
CGGCGGCGGCGCTATAACCCTCTCCCCGCCGCCGGCCGGCTCCACACGCGCGCCC
TGCGGAGCCCCGCCAACTCCGGCGAGCCGGGCGCTGCGCCTACTCCTCCTCCTCCT
CTCCCGGCGGCGGCTGCGGCGGAGGCGCCGACTCGGCCTTGCGCCCCGCCCTCAG
25 GCGGCGCGGGCGGCGCAGCGAGGCCCGGGCGGCGGGTGGTGGCTGCCAGGCG
GCTCGGCCGCGGGCGCTGCCCCGCCCGGCGAGCGGAGGGCGGAGCGCGGCGCC
GGAGCCGAGGGCGCGCCGCGGAGGGGGTGTGTTGGCCGCGCTGTGCCCCGCCGGG
CGGCGGCTGCAAGAGGAGGCGGAGGCGAGCGCGGGGCCGGCGGTGGGCGCGC
AGGGCGGCTCGCAGCTCGCAGCCGGGGCCGGGCCAGGCGTTCAGGCAGGTGATC
30 GGTGTGGCGGCGGCGGCGGCGGCCCCAGACTCCCTCCGGAGTTCTTCTTGGG
GCTGATGTCCGCAAATATGCAGAATTACCGGCCGGGTGCTCCTGAAGCCAGCG
CGGGGAGCGAGCGCGGCGGCGGCCAGCACCGGGAACGCACCGAGGAAGAAGCC
CAGCCCCCGCCCTCCGCCCTTCCGTCCCCACCCCTACCCGGCGGCCAGGAGG
CTCCCCGCGCTTCCGGGCGCGCACTCCCTGTTTCTCCTCCTCCTGGCTGGCGCTGCC
35 TGCCTCTCCGCACTCACTGCTCGCGCCGGGCGCGCTCCGCCAGCTCCGTGCTCCC
CGCGCCACCCTCCTCCGGGCCGCGCTCCCTAAGGGATGGTACTGAATTTCCGCCG
CACAGGAGACCGGCTGGAGCGCCCCGCCCGCGGCCTCGCCTCTCCTCCGAGCAG
CCAGCGCCTCGGGACGCGATGAGGACCTTGGCTTGCCTGCTGCTCCTCGGCTGCG
GATACCTCGCCCATGTTCTGGCCGAGGTTGGTGCCGCCCCCGCGCCCCGTCCCTG
40 CGCCGGCTCCTCCG

SEQ ID NO: 144

>gi|2217690|gb|AA487526.1|AA487526 ab20e09.s1 Stratagene lung (#937210) Homo sapiens cDNA clone IMAGE:841384 3', mRNA sequence

45 TTGTGGAAAACCTCAACCTTTATTATTACCTGCCTAGTGCAGGGGATTAAAATTGC
CTCAAGCTAGGTCCATATATTAGTG

SEQ ID NO: 145

>gi|219911|dbj|D12614.1|HUMLTNFB Human mRNA for lymphotoxin (TNF-beta),
complete cds

5 GCCCCATCTCCTTGGGCTGCCCGTGCTTCGTGCTTTGGACTACCGCCCAGCAGTGT
CCTGCCCTCTGCCTGGGCCTCGGTCCCTCCTGCACCTGCTGCCTGGATCCCCGGCC
TGCTTGGGCCTGGGCCTTGGTTCTCCCCATGACACCACCTGAACGTCTCTTCCTCC
CAAGGGTGTGTGGCACCACCCTACACCTCCTCCTTCTGGGGCTGCTGCTGGTTCT
GCTGCCTGGGGGCCAGGGGCTCCCTGGTGTTGGCCTCACACCTTCAGCTGCCCAG
10 ACTGCCCCGTCAGCACCCCAAGATGCATCTTGGCCACAGCACCTCAAACCTGCTG
CTCACCTCATTGGAGACCCCAGCAAGCAGAACTCACTGCTCTGGAGAGCAAACA
CGGACCGTGCCTTCTCCAGGATGGTTTCTCCTTGAGCAACAATTCTCTCCTGGTC
CCCACCAGTGGCATCTACTTCGTCTACTCCCAGGTGGTCTTCTCTGGGAAAGCCT
ACTCTCCCAAGGCCACCTCCTCCCCACTCTACCTGGGCCATGAGGTCCAGCTCTTC
15 TCCTCCCAGTACCCCTTCCATGTGCCTCTCCTCAGCTCCCAGAAGATGGTGTATCC
AGGGCTGCAGGAACCCTGGCTGCACTCGATGTACCACGGGGCTGCGTTCAGCTC
ACCCAGGGAGACCAGCTATCCACCCACACAGATGGCATCCCCACCTAGTCCTCA
GCCCTAGTACTGTCTTCTTTGGAGCCTTCGCTCTGTAGAACTTGGAATAATCCAG
AAAGAAAAAATAATTGATTCAAGACCTTCTCCCCATTCTGCCTCCATTCTGACC
ATTTACAGGGGTCGTCACCACCTCTCCTTTGGCCATTCCAACAGCTCAAGTCTTCCC
20 TGATCAAGTCACCGGAGCTTTCAAAGAAGGAATTCTAGGCATCCCAGGGGACCA
CACCTCCCTGAACCATCCCTGATGTCTGTCTGGCTGAGGATTTCAAGCCTGCCTA
GGAATTCCCAGCCCAAAGCTGTTGGTCTGTCCACCAGCTAGGTGGGGCCTAGAT
CCACACACAGAGGAAGAGCAGGCACATGGAGGAGCTTGGGGGATGACTAGAGG
CAGGGAGGGGACTATTTATGAAGGCAAAAAAATTAAATTATTTATTTATGGAGG
25 ATGGAGAGAGGGGAATAATAGAAGAACATCCAAGGAGAAACAGAGACAGGCCC
AAGAGATGAAGAGTGAGAGGGCATGCGCACAAGGCTGACCAAGAGAGAAAGAA
GTAGGCATGAGGGATCACAGGGCCCCAGAAGGCAGGGAAAGGCTCTGAAAGCC
AGCTGCCGACCAGAGCCCCACACGGAGGCATCTGCACCCTCGATGAAGCCCAAT
AAACCTCTTTTCTCTG

30

SEQ ID NO: 146

>gi|1012035|gb|H59203.1|H59203 yr03c12.r1 Soares fetal liver spleen 1NFLS Homo sapiens
cDNA clone IMAGE:204214.5', mRNA sequence

35 AAAAGGAAGCTGTCTCGGGCATTGAACAAGCTAAAACTCCAGTGATGCCAAA
CTAGAACCAACAAATGTCCAAACCGTAACCTGTTCTCCTCGTGTAAGCCCTGC
CTCTCAGCCCCAGGANACGTCTGGGCGATGACAACCTATGCAACACTCCCCATTT
ACCTCCTTGTTCTCCACCAAAGCAAGGCAAGAAAGAGAATGGTCCCCCTCACTCA
CATACACTTAAGGGACGAAGATTGGTATTTGACAATCAGCTGACAATTAAGTCTC
CTAGCAAAAGAGAACTAGCCAAAGTTCACCAAAACAAAATACTTTCTTTTCAAGTTA
40 GGAAAAAGTCAAGGGNTTCACAACAAATTTTTGAGGCAGGGGTGTCCACTGAAG
GANAGGANTCTGGCTGCGTGGGGANTATTTCAAGGCAAGAAGGGCATTGTGCTAC
CNGCAGGCAAAGTTGGTNC

SEQ ID NO: 147

45 >gi|1162368|gb|N39161.1|N39161 yv26a01.s1 Soares fetal liver spleen 1NFLS Homo
sapiens cDNA clone IMAGE:243816 3' similar to gb:M98399 PLATELET

GLYCOPROTEIN IV (HUMAN);, mRNA sequence

TTAAGGAAGAACATATTTTAATGGTTGAAACCTGTCTTTATGAGGCGATTATGAC
AGCAAAAAATATTATAATGAATAACAATGCATAGTCTACGCTTTGTAATATTTCA

TACAATAATTCCTTTATCATTTACATCTCTTAATGCTAGAAAAGCATTCTGAAGAT
 GCCAAGCGTAAGTTGCAACTGAGTAAAAAAAAAAAAAGCAAAATTTACTCAATTT
 CCAGAAGAGGTGCAGAACAGAGAATGAAGGTCCTTAAATATAAACCGCTAGTG
 TGCTAAAATGATGTCCATTTGCAGGATCAGTGGACAAAATATTTAAGCCCATAAA
 5 GAAAAGAGTTATACCTGCTGTATGAAGGTATTCCATAGAGAAATATGAGTCATA
 AGCCAATTATTTATAAATGGCCTTCCAAATATTTGGT

SEQ ID NO: 148

>gi|1548486|gb|AA056148.1|AA056148 zf55d10.r1 Soares retina N2b4HR Homo sapiens
 10 cDNA clone IMAGE:380851 5' similar to TR:G1143719 G1143719 RS-REX-B. ;, mRNA
 sequence
 CTGTCTCGGAGCAGGCGGAGTAAAGGGACTTGAGCGAGCCAGTTGCCGGATTA
 TTCTATTTCCCTCCCTCTCTCCCGCCCCGTATCTCTTTTACCCTTCTCCCACCCT
 CGCTCGCGTANCATGGCGGACGTNNGGCGNCCACTCAGTCCCATTCCATCTCCTC
 15 GTCGTCTTCGGAGCCGAGCCGTCCGCGCCCCGGCGCGGCGNGNAGCCANGGAGC
 CTGCCCCGCCCTGGGGACGAAGAGCTGCAGCTCCTCCTGTGCGGTGCAGATTCTG
 ATTTTCTGGAGAGATGTGAAGAAGACTGGGTTTGTCTTTGGCACCACGCTGATCA
 TGCTGCTTTCCCTGGCAGCTTTCAGTGTATCAGTGTGGATTTCTTACCTCATCCT
 GGCTCTTCTCTGTGTCACCATCAGCTTCAGGATCTACAAGTCCGTCATCCAAGCTG
 20 TACAGAAGTCAGAAGAAGGCCATCCATTCAAAGCCTACTGGACGTAGACATTAC
 TCTGTCTAGAAGTTTCATAATTACATGAATGTGCATGTGACATAACAGGGCCTGA
 AACNATATTCGTTNTTTGGTAGAAATTGGTTGATCTTGAAGT

SEQ ID NO: 149

>gi|545303|gb|S69200.1|S69200 EP3 prostanoid receptor isoform EP 3-II {alternatively
 25 spliced} [human, mRNA, 1682 nt]
 AGAGAGGAAGGCGTGGCTCCCTCCCGGGCCAGTGAGCCCTGGCGCCCGCCGCGGC
 CGCGGTCCCAGCAGCGGAGTAGGGCGGCGGCTGCGCCCCGCACCATGGGGGGCA
 GCCCAGCCCCAGCCGCGGTAAACGCCGACCTCCGCCCGCCCGCCCGCGCGCTCT
 30 GCCCCCTCCCGCTGCGGCTCTCTGGACGCCATCCCCCTCCTCACCTCGAAGCCAAC
 ATGAAGGAGACCCGGGGCTACGGAGGGGATGCCCCCTTCTGCACCCGCTCAAC
 CACTCCTACACAGGCATGTGGGCGCCCGAGCGTTCCGCCGAGGCGCGGGGCAAC
 CTCACGCGCCCTCCAGGGTCTGGCGAGGATTGCGGATCGGTGTCCGTGGCCTTCC
 CGATCACCATGCTGCTCACTGGTTTTCGTGGGCAACGCACTGGCCATGCTGCTCGT
 35 GTCGCGCAGCTACCGGCGCCGGGAGAGCAAGCGCAAGAAGTCCTTCTGCTGTG
 CATCGGCTGGCTGGCGCTACCGACCTGGTCGGGCAGCTTCTACCAACCCCGGTC
 GTCATCGTCTGTACCTGTCCAAGCAGCGTTGGGAGCACATCGACCCGTCGGGGC
 GGCTCTGCACCTTTTTTCGGGCTGACCATGACTGTTTTTCGGGCTCTCCTCGTTGTTC
 ATCGCCAGCGCCATGGCCGTCGAGCGGGCGCTGGCCATCAGGGCGCCGCACTGG
 40 TATGCGAGCCACATGAAGACGCGTGCCACCCGCGCTGTGCTGCTCGGCGTGTGGC
 TGGCCGTGCTCGCCTTCGCCCTGCTGCCGGTGCTGGGCGTGGGCCAGTACACCGT
 CCAGTGGCCCGGGACGTGGTGCTTCATCAGCACCCGGGCGAGGGGGCAACGGGAC
 TAGCTCTTCGCATAACTGGGGCAACCTTTTCTTCGCCTCTGCCTTTGCCTTCCTGG
 GGCTCTTGGCGCTGACAGTCACCTTTTCTGCAACCTGGCCACCATTAAAGGCCCT
 45 GGTGTCCCGCTGCCGGGCCAAGGCCACGGCATCTCAGTCCAGTGCCAGTGGGG
 CCGCATCACGACCGAGACGGCCATTACGTTATGGGGATCATGTGCGTGTGTCG
 GTCTGCTGGTCTCCGCTCCTGATAATGATGTTGAAAATGATCTTCAATCAGACAT
 CAGTTGAGCACTGCAAGACACACACGGAGAAGCAGAAAGAATGCAACTTCTTCT
 TAATAGCTGTTTCGCTGGCTTCACTGAACCAGATCTTGGATCCTTGGGTTTACCTG

CTGTTAAGAAAGATCCTTCTTCGAAAGTTTTGCCAGGTAGCAAATGCTGTCTCCA
GCTGCTCTAATGATGGACAGAAAGGGCAGCCTATCTCATTATCTAATGAAATAAT
ACAGACAGAAGCATGAAAGAAAACACTTAACTTGCATGTGCACAGCTTCTGGTA
ACAAATATCGCTAAACCTTACTGTGAATTTAGGCATCTCTGGCATGCCACTGTTT
5 ATGCATTGAAGTGGAATTTTTGGTATAAAGCTAAATGGTCTTAGAAGCATAGAAA
ATCCCTATGTGCCAAAAGTAGTGAAACACAAACAAAGGAAAATATATTAATAAC
AGTCTAGTGTTTTTGTGAGTCTGCCATTCGTAGCTGAATATGTGATTAATTATGT
GATGAAAACCTTTTTTATAAATGATCTTGGTCTATTGGGG

10 SEQ ID NO: 150

>gi|4481752|gb|M86849.2|HUMGAPJUNC Homo sapiens connexin 26 (GJB2) mRNA,
complete cds

GATTTAATCCTATGACAACTAAGTTGGTTCTGTCTTCACCTGTTTTGGTGAGGTT
GTGTAAGAGTTGGTGTGTTGCTCAGGAAGAGATTTAAGCATGCTTGCTTACCCAGA
15 CTCAGAGAAGTCTCCCTGTTCTGTCCTAGCTATGTTCTGTGTTGTGTGCATTTCGT
CTTTTCCAGAGCAAACCGCCCAGAGTAGAAGATGGATTGGGGCACGCTGCAGAC
GATCCTGGGGGGTGTGAACAAACACTCCACCAGCATTGGAAAGATCTGGCTCAC
CGTCCTCTTCATTTTTTCGCATTATGATCCTCGTTGTGGCTGCAAAGGAGGTGTGGG
GAGATGAGCAGGCCGACTTTGTCTGCAACACCCTGCAGCCAGGCTGCAAGAACG
20 TGTGCTACGATCACTACTTCCCCATCTCCACATCCGGCTATGGGCCCTGCAGCT
GATCTTCGTGTCCAGCCCAGCGCTCCTAGTGGCCATGCACGTGGCCTACCGGAGA
CATGAGAAGAAGAGGAAGTTCATCAAGGGGGAGATAAAGAGTGAATTTAAGGA
CATCGAGGAGATCAAAACCCAGAAGGTCCGCATCGAAGGCTCCCTGTGGTGGAC
CTACACAAGCAGCATCTTCTTCCGGGTCATCTTCGAAGCCGCCTTCATGTACGTCT
25 TCTATGTCATGTACGACGGCTTCTCCATGCAGCGGCTGGTGAAGTGCAACGCCTG
GCCTTGTCCCAACACTGTGGACTGCTTTGTGTCCCGGCCACGGAGAAGACTGTC
TTCACAGTGTTTCATGATTGCAGTGTCTGGAATTTGCATCCTGCTGAATGTCACTGA
ATTGTGTTATTTGCTAATTAGATATTGTTCTGGGAAGTCAAAAAGCCAGTTTAA
CGCATTGCCCAGTTGTTAGATTAAGAAATAGACAGCATGAGAGGGATGAGGCAA
30 CCCGTGCTCAGCTGTCAAGGCTCAGTCGCCAGCATTTCCCAACACAAAGATTCTG
ACCTTAAATGCAACCATTTGAAACCCCTGTAGGCCTCAGGTGAAACTCCAGATGC
CACAATGAGCTCTGCTCCCCTAAAGCCTCAAAACAAAGGCCTAATTCTATGCCTG
TCTTAATTTTCTTTTCACTTAAGTTAGTTCCTACTGAGACCCAGGCTGTTAGGGGTT
ATTGGTGTGAGGTACTTTTCATATTTTAAACAGAGGATATCGGCATTTGTTTCTTTG
35 TCTGAGGACAAGAGAAAAAAGCCAGGTTCCACAGAGGACACAGAGAAGGTTTG
GGTGTCTCCTGGGGTTCTTTTTGCCAACTTTCCCCACGTTAAAGGTGAACATTGG
TTCTTTTCATTTGCTTTGGAAGTTTTAATCTCTAACAGTGGACAAAGTTACCAGTGC
CTTAAACTCTGTTACACTTTTTGGAAGTGAAAACCTTTGTAGTATGATAGGTTATTT
TGATGTAAAGATGTTCTGGATAACCATTATATGTTCCCCCTGTTTCAGAGGCTCAG
40 ATTGTAATATGTAAATGGTATGTCATTTCGCTACTATGATTTAATTTGAAATATGGT
CTTTTGGTTATGAATACTTTGCAGCACAGCTGAGAGAGGCTGTCTGTTGTATTTCAT
TGTGGTCATAGCACCTAACAACATTGTAGCCTCAATCGAGTGAGACAGACTAGA
AGTTCCTAGTTGGCTTATGATAGCAAATGGCCTCATGTCAAATATTAGATGTAAT
TTTGTGTAAGAAATACAGACTGGATGTACCACCACTACTACCTGTAATGACAGG
45 CCTGTCCAACACATCTCCCTTTTCCATGCTGTGGTAGCCAGCATCGGAAAGAACG
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GTACTCCACATACTTCAGTGAGGGTAAGTATTTTCCTGTTGTCAAGAATAGCATT
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5 ATAATTTTGTAAATGTATCAAATACATTTAAAACATTAAAATATAATCTCTATAAT

SEQ ID NO: 151

>205581R6

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10 ATCACTCCAGAAAGCTTTGGAAGAGATTTCATCCCTCACATGCCTGGCTGGGAATG
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GAGTGGCAAGAATGGGCCTCATGTGTACCAGGACCTCCTGCTTAGCCTTGGGACT
ACAAACAGCACGCTGCCCCCTCCATTTTCTCTCCAATCTGGAATCCTGACATTGA
ACCCAGTTGCTCAGGGTCAGCCCATCTTACTTCCCTGGGATCAAATCAAGAAGA
15 AGCATATGTCACCATGTCCAGCTTCTACCAAACACAGTGAAGTGTAAAGAAAACC
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AGTTCCTAGTCTCCCTAACAGCACCAGAGAAGACA

SEQ ID NO: 152

20 >3386845H1

TGCCTGTAAGAAACATGATATAACTGTCAAAAGGACAGAAAGTCAGCTACATCA
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AAATTTTCCCTCAATATGAAAAAAGAAACAAAGAAAATCTATGAGAAGTGCCA
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25 TCCAACAACCTTCCTACTAACAGGCTTTCTCCTTC

SEQ ID NO: 153

>gi|29707|emb|X07549.1|HSCATH Human mRNA for cathepsin H (E.C.3.4.22.16.)

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35 AGGGGATCATGGGTGAAGACACCTACCCCTACCAGGGCAAGGATGGTTATTGCA
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40 TGGAGAAAAAATGGGATCCCTTACTGGATCGTGAAAAACTCTTGGGGTCCCCA
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CAGACTGGCGGAGAAGGAGAGGAACGGGCAGCCTGGGCCTGGGTGGAAATCCT
GCCCTGGAGGAAGTTGTGGGGAGATCCACTGGGACCCCCAACATTCTGCCCTCAC
45 CTCTGTGCCAGCCTGGAAACCTACAGACAAGGAGGAGTTCCACCATGAGCTCA
CCCGTGTCTATGACGCAAAGATCACCAGCCATGTGCCTTAGTGTCTTCTTAACA
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SEQ ID NO: 154

>gi|1927579|gb|AA284668.1|AA284668 zt24g06.r1 Soares ovary tumor NbHOT Homo sapiens cDNA clone IMAGE:714106 5' similar to gb:M15476 UROKINASE-TYPE

5 PLASMINOGEN ACTIVATOR PRECURSOR (HUMAN);
TTTTTCTGGACTGAAGCCTGCAGGAGTTAAAAAGGGCAGGGCATCTCCTGTGCAT
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AGCTTAGCCAATGTGGGAGCAGCGGTTTGGGGAGCAGAGACACTAACGACTTCA
10 GGGCAGGGCTCTGATATTCCATGAATGTATCAGGAAATATATATGTGTGTGTATG
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GACAGTGGCTGGGAATGTATTAGTCCTCAGCATGACCTGTGACAACACTGTCTCA
15 AGTTCCTTTCACATAGATGTCCGTTCTT

SEQ ID NO: 155

>gi|186496|gb|M59911.1|HUMINTA3A Human integrin alpha-3 chain mRNA, complete cds

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25 ACCGGACTGGTGTGTGTACCTGTGCCCACTCACTGCCCAACAAGGATGACTGTGA
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30 TGGCAGACCTACCACAACGAGATGTGCAATAGCAACACAGACTACCTGGAGACG
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35 CATTGTGACAGGTGCCCCACGGCACCGACATATGGGCGCGGTGTTCTTGCTGAGC
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40 TCACTCCTTCTTCATGGCCCCAGTGGCTCTGCCTTTGGTTTATCTGTGGCCAGCAT
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45 AGTGGGAAGCCTGTGAGACCATTGTGCTGCTGCGGGCCCCGGCCAGTCATCAA
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5 GGAGTGCGGGCCTGACAACAAGTGTGAGAGCAACTTGCAGATGCGGGCAGCCTT
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10 TGGGGAACCCCTTCAAACGGAACCAGAGGATGGAGCTGCTCATCGCCTTTGAGG
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15 TCAAGTATGAATTCCAGGTGGGCCCAATGGGGGAGGGGCTGGTGGGCCTGGGGA
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20 CACCTGTCACTCTGGCTGCTGCCAAAAAGCCAAGTCTGAGACTGTGCTGACCTG
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25 ACATTGACTCGGAGCTGGTGGAGGAGCTGCCGGCCGAAATCGAGCTGTGGCTGG
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30 GCGGACCCGCTATTATCAGATCATGCCAAGTACCACGCAGTGCGGATCCGGGA
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45 GAGTGCAGCAGGAAGGAACAAAGACAGGCAAACGGCAACGTAGCCTGGGCTCA
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AGACAGATGTTGGGAGGATACAGAGGAGATGCCACTTCTCACTACCACTACCA
GCCAGCCTCCAGAAGGCCCCAGAGAGACCCTGCAAGACCACGGAGGGAGCCGA
CACTTGAATGTAGTAATAGGCAGGGGGCCCTGCCACCCCATCCAGCCAGACCCC

AGCTGAACCATGCGTCAGGGGCTAGAGGTGGAGTTCTTAGCTATCCTTGGCTTT
CTGTGCCAGCCTGGCTCTGCCCCCTCCCCCATGGGCTGTGTCTAAGGCCATTG
AGAAGCTGAGGCTAGTTCCAAAAACCTCTCCTGACCCCTGCCTGTTGGCAGCCCA
CTCCCCAGCCCCAGCCCCCTTCCATGGTACTGTAGCAGGGGAATTCCTCCCCCTC
5 CTTGTGCCTTCTTTGTATATAGGCTTCTACCGCGACCAATAAACAGCTCCCAGTT
TGT

SEQ ID NO: 156

>gi|189204|gb|M14764.1|HUMNGFR Human nerve growth factor receptor mRNA, complete
10 cds

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15 GCCTGTACACACACAGCGGTGAGTGCTGCAAAGCCTGCAACCTGGGCGAGGGTG
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25 TGAGGCACCTCCAGAACAAGACCTCATAGCCAGCACGGTGGCAGGTGTGGTGAC
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TAGCCTTCAAGAGGTGGAACAGCTGCAAGCAGAACAAGCAAGGAGCCAACAGC
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30 GGCATCTCCGTGGACAGCCAGAGCCTGCATGACCAGCAGCCCCACACGCAGACA
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35 CCACACTGGACGCCCTCCTGGCCGCCCTGCGCCGCATCCAGCGAGCCGACCTCGT
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40 GTGGCCCCCTTCACTTCTGACCACACTTCCTGTCCAGAGAGAGAAGTGCCCTGCT
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AGGGAGGAATCGAGGAACCAGAGCCATGGACTCTACACTGTGAACTTGGGGAAAC
45 AAGGGTGGCATCCCAGTGGCCTCAACCCTCCCTCAGCCCTCTTGCCCCCACCC
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5 GTCTGCTGCCCTCCATCCCGACATGGACCCGGAGCTAACACTGGCCCCCTAGAATC
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10 ACCGAGGCTGGAGCTGGCGTCTGTCTTCAAGGGCTTACACGTGGAGGAATGCTCC
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15 GGCCTGTTCTGTTTTGCCTGAAGTTGGAGTGAGTGTGGCTCCCTCTATTTAGCAT
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CCCCCAGCCCTGTGGAAGGGACTAGGAGCACTGTAGTAAATGGCAATTCTTTGAC
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20 GGGGTTTGGTGGCTTGCAAGTATGTTTTAGCATGTGTTTGGTTCTGGGGCCCCTTT
TTACTCCCCTTGAGCTGAGATGGAACCCTTTTGGCCCCCAGCTGGGGGCCATGAG
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AGCAAAG

25

SEQ ID NO: 157

>873 BLOOD 234929.1 U34038 g1041728 Human protease-activated receptor-2 mRNA,
complete cds. 0

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30 GCTGACTTTCTCTCGGTGCGTCCAGTGGAGCTCTGAGTTTCGAATCGGTGGCGGC
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CGGCGTGGCTGCTGGGGGGCCGCCATCCTGCTAGCAGCCTCTCTCTCCTGCAGTGG
CACCATCCAAGGAACCAATAGATCCTCTAAAGGAAGAAGCCTTATTGGTAAGGT
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35 TGTGGATGAGTTTTCTGCATCTGTCCTCACTGGAAAAGTACCCTGTCTTCCTTC
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45 TCTGGCCATTGGGGTCTTTCTGTTCCAGCCTTCCTCACAGCCTCTGCCTATGTGC
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15 NNN
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SEQ ID NO: 158

279279H1

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40

SEQ ID NO: 159

>gi|340155|gb|K03226.1|HUMUKM1 Human preprourokinase mRNA, complete cds

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45 TGCGTCCTGGTCGTGAGCGACTCCAAAGGCAGCAATGAACTTCATCAAGTTCCAT
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15 ACCAAAATGCTGTGTGCTGCTGACCCACAGTGGAAAACAGATTCCTGCCAGGGA
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SEQ ID NO: 160

>4727571H1

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30 SEQ ID NO: 161

>2135769H1

GCTCGCGTCGCATTTGGCCGCCTCCCTACCGCTCCAAGCCCAGCCCTCAGCCATG
GCATGCCCCCTGGATCAGGCCATTGGCCTCCTCGTGGCCATCTTCCACAAGTACT
CCGGCAGGGAGGGTGAACAAGCACACCCTGAGCAAGAAGGAGCTGAAGGAGCTG
35 ATCCAGAAGGAGCTCACCATTGGCTCGAAGCTGCAGGATGCTGAAATTGCAAGG
CTGATGGAAGACTTGGACCGGAACAAGGACCAGGAGGTGAACTTCCAGGAGTAT
GTCACCTTCCTGGGGGC

SEQ ID NO: 162

40 >gi|2179161|gb|AA456585.1|AA456585 zx73c10.s1 Soares ovary tumor NbHOT Homo
sapiens cDNA clone IMAGE:809394 3' similar to SW:RECQ_HUMAN P46063 ATP-
DEPENDENT DNA HELICASE Q1. ;, mRNA sequence

TCTTTAAAGGCTTTATTTGCATTCTTGTAATTTTATTATTTCAAGTCAATGTGTTA
AGAATTACTGCGCATATAGTTATTTCTTTTATAAATTTGTTTTCCGTGATTCCTTC
45 AAAAGCTTTCTTATTGTTGGCCTTTATTTTCTGCAGAGAAGACTACAGTTTTACAG
CTTATGCTACCATTTCTGATTTGAAAATAGGACCTAAAGCTAATCTTCTGAACAA
TGAGGCACATGCTATTACTATGCAAGTGACAAAGTCCACGCAGAACTCTTTCAGG
GTAAATGGCTATTAATTTTCAGTTTTATATATT

SEQ ID NO: 163

>1452259F6

CTGGTTCAATTTTTACAGGAATTCAGTAAGATAAATACTATTCTCTGAATTCAAA
AAACAACCTTCTTCAGGGCCACAAAACACTGGGGATAAAGACAAGAAGAACTACA
5 GCAGGGGTCCCCACCTACTCGNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
NNNNNNNNNNNNNNNNNNNNNNNNNNNAGGTGATTCTGATCGGATGTTACATAG
CCATATCCAGGTACATCCACAAATCCAGCAGGCAATTCATAAGTCAGTCAAGCC
GANAGCGAAAACATAACCAGAGCATCAGGGTTGTTGTGGCTGTGTTTTTTACCTG
CTTTCTATCATATCACTTGTGCAGAATTCCTTTTACTTTTAGTCACTTAGACTAGG
10 CTTTATAGATGAATCTGCACAA

SEQ ID NO: 164

>1650566F6

CAATTCAGGCAACAGGAGCNANGGGCCAGGAAAGAACACCACCCTTTCACAATG
15 AATTTGACACAATTGTCTTGCCGGTGCTTTATCTCATTATATTTGTGGCAAGCATC
TTGCTGAATGGTTTAGCAGTGTGGATCTCTCCACATTAGGAATAAAACCAGCTT
CATATTCTATCTCAAAAACATAGTGGTTGCAGACCTCATAATGACGCTGACATT
CCATTTCGAATAGTCCATGATGCAGGATTTGGACCTTGGTACTTCAAGTTTATTCC
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20

SEQ ID NO: 165

>gi|2177519|gb|AA454743.1|AA454743 zx77e01.s1 Soares ovary tumor NbHOT Homo
sapiens cDNA clone IMAGE:809784 3', mRNA sequence

AGCTTTTTTTTTTCATAATAAAATGCATTCTTTATTGAGTGCATGGTGGCCCAGGT
25 GCTATTCCATGTATGTATAGGTGTGAACTTTAAATCTTTCCAACAGCCACTGC
CTTATGGAGACTGTATCATCCTTATCTTCATCTTACAGGTGAGAAATCTGCAGTG
AAGAAAGGTACATCCCAAG

SEQ ID NO: 166

30 >gi|2072424|gb|U83115.1|HSU83115 Human non-lens beta gamma-crystallin like protein
(AIM1) mRNA, partial cds

CAGCTCCGAGGGGAGTCGGACCGGAGCAAACAGCCACCCCCGGCTTCGTCCCCC
ACGAAGAGGAAGGGCAGGAGCCGTGCCCTCGAGGCCGTGCCCGCCCCGCCGCC
AGCGGCCCCCGGGCTCCCGCCAAGGAGTCCCCACCCAAGAGGGTGCCCGATCCC
35 AGCCCAGTCACCAAGGGCACTGCGGCCGAGAGCGGGGAGGAGGCGGCGCGGGC
CATCCCCCGCGAGCTCCCGGTCAAGAGCAGCTCGCTGCTGCCGGAGATCAAGCC
CGAGCACAAAGAGGGGGCCCGCTCCCCAACCATTCAACGGCCGGGCAGAGGGAGG
TCGAAGCAGAGAGCTGGGCAGAGCGGCCGGAGCGCCTGGAGCTTCTGACGCCGA
CGGCTTGAAGCCCAGGAACCATTTTCGGCGTGGGCAGGTCGACAGTGACCACTAA
40 AGTGACCCTCCCTGCCAAGCCCAAACATGTGGAATAAATCTTAAACCCCTAAG
AATCTTGACAGTTTGGGAAATGAGCACAATCCATTTAGCCAGCCAGTTCACAAAG
GCAACACTGCCACCAAAATCTCCTTATTTGAAAACAAACGGACAAACAGTAGCC
CAAGACACACTGACATTTCGAGGCCCAAGGAATACTCCTGCCTCTAGTAAACGTT
TGTTGGGAGGGCAAAGCTGAATTTAGCCAAAAAAGCCAAAGAAATGGAGCAACC
45 TGAAAAGAAAGTAATGCCAAACAGTCCCCAGAATGGTGTGCTGGTTAAGGAAAC
TGCTATAGAAACCAAAGTTACCGTCTCGGAAGAAGAGATTCTGCCAGCAACCAG
AGGAATGAATGGAGACTCTTCTGAGAATCAAGCTCTTGGTCCTCAGCCTAACCAG
GATGATAAAGCAGATGTACAAACAGATGCTGGCTGCCTTTCAGAACCAGTGGCT
TCTGCTCTGATTCTGTCAAGGATCATAAGCTCTTAGAGAAGGAGGACTCAGAGG

CTGCAGACAGCAAAAAGCCTTGTACTTGAAAATGTAACCGATACAGCACAAGACA
TCCCCACCACTGTGGATACCAAAGATTTACCTCCAACGGCCATGCCAAAGCCACA
GCATACATTTTCTGACTCACAGTCCCCTGCTGAGTCATCTCCTGGGCCTTCTCTTT
CACTGTCTGCACCCGCTCCTGGGGATGTTCCCAAAGACACATGTGTTCAATCACC
5 CATAAGCAGTTTCCCATGCACTGATCTAAAAGTGTGAGAAAACCATAAAGGATG
TGTTTTGCCTGTGTCTCGTCAGAACAAATGAGAAAATGCCACTTTTAGAACTTGGA
GGAGAAACAACCCCTCCTTTGTCCACAGAGCGTAGTCCAGAAGCTGTGGGAAGT
GAGTGTCCATCCAGAGTCCTCGTCCAGGTCAGGTCCTTCGTGCTCCCCGTGGAGA
GCACCCAGGATGTGAGCTCCCAGGTCATCCAGAGAGCTCTGAAGTTAGAGAAG
10 TGCAGTTGCCAACTTGTACAGTAATGAACCTGAAGTGGTTTCCGTTGCAAGTTG
TGCTCCCCCAAGAGGAAGTACTGGGCAATGAACACTCTCATTGCACAGCAGA
GCTCGCGGCAAAATCTGGCCCAAGTCATACCGCCAGCATCAGAGAAAACCTCT
GCCTATTCAAGGCTCAAAGTCAGGGCAGCAGAACACCCCTGATGGCTGAATCCAG
TCCCACCAACTCTCCCAGCAGCGGAAATCACTTAGCCACTCCTCAAAGGCCAGAT
15 CAGACTGTTACAAATGGCCAGGATAGCCCTGCCAGCCTTTTGAACATTTCTGCTG
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20 AAGTCAGCCAGAAATGTCAACCGCTTTACATTTGATGCAGAACCTTGACACAAA
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25 CTCCTTCTGTGACATCAGTCAACACTATGACCACGGCTTTCAGTACTTCTCAGAA
CGGTTCCCTATCTCAGTCTTCAGTGTCACAGCCCACGACTGAGGGTGCCCCGCCC
TGTGGTTTGAACAAAGAACAGTCAAATCTTCTGCCCAGCAACTCCTTAAAGGTCT
TCAATTTCAACTCGTCAAGTACATCACACTCCAGTTTGAAAAGTCCAAGCCACAT
GGAAAAATACCCGCAAAAAGAGAAAACCAAAGAAGATCTGGATTACGAAGCA
30 ACCTACACTTGCCAGAACTAAATTTTCTGAATTGTCAAACTGAAGAATGATGA
TATGGAAAAGGCTAATCATATTGAAAGTGTTATTAATCAAACCTGCCAACTGT
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35 CGTCTCTGAGAAGTGCATTGAAGTTTTTCAGTGACATTCAGGATTGCAGTTCTTGG
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40 TAGTCACATTGACTTATTTACTGAACCAGAAGGGTTAGGAATCCTAAGTTCCTAC
TTTGATGATACTGAAGAAATGCAGGGATTGGTGTAATGCAGAAGACTTGTTCCA
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GCAGCGTACATTGGATCCATGCGGCCTCTGAAAATGGGTGGCCGTAAAGTTGAA
45 TTCCCTACAGATCCAAAGGTAGTTGTTTATGAAAAGCCTTTCTTTGAAGGAAAAT
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AAGAGGCGACTGGAGACGATCATTGCGGTTTACGTCAAGTGGGGTCTATGAAAG
TTCTAAGAGGCATTTGGGTTGCATATGAGAAGCCTGGATTTACCGGTCATCAGTA
TTTGCTAGAAGAAGGAGAATACAGGGACTGGAAAGCCTGGGGAGGTTACAATGG

AGAGCTTCAGTCTTTACGACCTATATTAGGTGATTTTTCAAATGCTCACATGATA
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5 TATACTGGATAAAGGATTTTATACCAGTTTGTAGGACTGGGGAGGCAAAAATTAT
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10 TGTGGAAGAAGGCCATTATCCTTGTCTGTCTGCAATGGGATGCCCCCTGGAGC
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TGGCATATGGGTTACTTATGAATATGGCAGTTACAGAGGGCGACAGTTCCTATTG
15 TCACCTGCAGAAGTACCTAATTGGTATGAATTCAGTGGCTGTCGCCAAATAGGTT
CTCTACGACCTTTTGTTCAGAAGCGAATTTATTTTCAGACTTCGAAACAAAGCAAC
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CAGGTCATGGAGGATGTCGGGGCCGATGATCAGATTTGGATCTATCAAGAAGGA
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20 GTAACATCTGGCTCCAAGCTAGGCCTGGCCCTGGACCAGAATGCTGACAGCCAG
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25 AAAGGACAATGCTGATGGAAGACCAGACTGGAAAGTGGATCGACTCCTCCTTCA
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30 AAAGATAGTGACAGGAGAGAACTGGAACAAATTTACCAACTTTGTGGACCTACA
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35 TAAAAATTAATACATTTTAAAAATTTAATGTCAAAGTCTGGTAACATTTGTTAGT
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40 CTGGGCTCAAGCAATTCACCTCGCCTCGGCCTCCCAAATGCTGGGATTACAGGCC
TGAGCCACTGCGCCCAGCCAGGATTTGAATTATTTTAACTCATCCATGGGCTGCC
CTAGAATGTCACAAATGAGGGTTGTTTAAATGCCTTTCTTATAGCTGCTACTGGAA
CACTATTATGACCTAATTTATGAGCCATCCTTACTCATCTACAAGTGCTGAAGCA
ATGTTACATACTTTTTTGCTAAACTCAGATTTTTTAGCCTAATTTCTTGTCTCCTA
45 TCCACCTGCATCCACACATGGCCTGCATGGGGCTGCCTTCCCTGCAGTGTTCTGC
AGCCATGCTTCAGGGTATAGCTGTTGGTGGACAGCCTCAGGTCTTGGGGGCACTA
TAGCCACTAAACGAGGTGTGAAAGGCTCAAGAGGATGACCAGCAATTAATTATC
CCCAGAAAGTGAAGGAAAAGAGACCTTTAGGGATGTTGCTGGTCAAGTCTTGAT
TTGACCGGAGTCAAATCAATCTTCAAGCAATCTTGAATCCTCAACTGCAGTAAG

CATTTCAAAATGCAAACAACTGCTTAACAACTGACAAGACACCAGCCCATATG
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5 GATCTTCTCTGGAGTCTATGGTAGGCAATTATGGTCACTGGAATAGTTTGTCTTGT
TTTAAATATTATTGGTGCATGTACAACAGCATCCAACATATCTGTCTTGTTCCTA
GATATATAGCTCTGATTTTAGGCCTTTTGTGCATACCATTACAATATGGTGGGGT
AAGACATTCTACAGTAGCCTGTGCTGAAGTATCTCTTAAATAAACTTGCTTCTG
GTAACTAAAAAAAAAAAAAAAAAAAAA

10 SEQ ID NO: 167

>gi|1518787|gb|U62801.1|HSU62801 Human protease M mRNA, complete cds

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15 CTCCCCGGCTGGCTGGCTCGCTCTCTCTGGGGACACAGAGGTCTGGCAGGCAGCA
CACAGAGGGACCTACGGGCAGCTGTTCTTCCCCCGACTCAAGAATCCCCGGAG
GCCCCGAGGCCTGCAGCAGGAGCGGCCATGAAGAAGCTGATGGTGGTGTGAGT
CTGATTGCTGCAGCCTGGGCAGAGGAGCAGAATAAGTTGGTGCATGGCGGACCC
TGCGACAAGACATCTCACCCCTACCAAGCTGCCCTCTACACCTCGGGCCACTTGC
20 TCTGTGGTGGGGTCTTATCCATCCACTGTGGGTCTCACAGCTGCCCACTGCAA
AAAACCGAATCTTCAGGTCTTCTGGGGAAGCATAACCTTCGGCAAAGGGAGAG
TTCCCAGGAGCAGAGTTCTGTTGTCCGGGCTGTGATCCACCCTGACTATGATGCC
GCCAGCCATGACCAGGACATCATGCTGTTGCGCCTGGCACGCCAGCCAAACTCT
CTGAACTCATCCAGCCCCCTTCCCCTGGAGAGGGACTGCTCAGCCAACACCACCAG
25 CTGCCACATCCTGGGCTGGGGCAAGACAGCAGATGGTGATTTCCCTGACACCATC
CAGTGTGCATACATCCACCTGGTGTCCCGTGAGGAGTGTGAGCATGCCTACCCTG
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30 CAACGCTGTGCAGATACACGAACTGGATCCAAAAAACCATTACAGGCCAAGTGACC
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TCTCTCACCTAGACCTTGCCCTCCCTCCTCTCCTGCCAGCTCTGACCCTGATGCT
TAATAAACGCAGCGACGTGAGGGTCTGATTCTCCCTGGTTTTACCCAGCTCCA
TCCTTGATCACTGGGGAGGACGTGATGAGTGAGGACTTGGGTCTCTCGGTCTTAC
35 CCCCACCACTAAGAGAATACAGGAAAATCCCTTCTAGGCATCTCCTCTCCCCAAC
CCTTCCACACGTTTGATTTCTTCTGTCAGAGGCCAGCCACGTGTCTGGAATCCC
AGCTCCGCTGCTTACTGTGCGGTGTCCCTTGGGATGTACCTTTCTTCACTGCAGAT
TTCTCACCTGTAAGATGAAGATAAGGATGATACAGTCTCCATCAGGCAGTGGCTG
TTGGAAAGATTTAAGATTTACACCTATGACATACATGGGATAGCACCTGGGCCG
40 CCATGCACTCAATAAAGAATGTATTTT

SEQ ID NO: 168

>gi|2570124|dbj|AB000712.1|AB000712 Homo sapiens hCPE-R mRNA for CPE-receptor,
complete cds

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TCCTGACTCACGGTGCAAAGGTGCACTCTGCGAACGTTAAGTCCGTCCCCAGCGC
TTGGAATCCTACGGCCCCCACAGCCGGATCCCCTCAGCCTTCCAGGTCCTCAACT
CCCGTGGACGCTGAACAATGGCCTCCATGGGGCTACAGGTAATGGGCATCGCGC
TGGCCGTCCTGGGCTGGCTGGCCGTCATGCTGTGCTGCGCGCTGCCCATGTGGCG

CGTGACGGCCTTCATCGGCAGCAACATTGTCACCTCGCAGACCATCTGGGAGGGC
CTATGGATGAACTGCGTGGTGCAGAGCACCGGCCAGATGCAGTGCAAGGTGTAC
GACTCGCTGCTGGCACTGCCGCAGGACCTGCAGGCGGCCCGCGCCCTCGTCATCA
TCAGCATCATCGTGGCTGCTCTGGGCGTGCTGCTGTCCGTGGTGGGGGGCAAGTG
5 TACCAACTGCCTGGAGGATGAAAGCGCCAAGGCCAAGACCATGATCGTGGCGGG
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CACAACATCATCCAAGACTTCTACAATCCGCTGGTGGCCTCCGGGCAGAAAGCGG
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10 CAAGTATTCTGCTGCCCCTGCTGCTGCCAGCAACTACGTGTAAGGTGCCACG
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CGGACAAC TTCCCAAGGCCGCTCCTGCTAGCAAGAACAGAGTCCACCCTCCTCT
15 GGATATTGGGGAGGGACGGAAGTGACAGGGTGTGGTGGTGGAGTGGGGAGCTG
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20 GATGGACGGGTTTAGAGGGGAGGGGCGAAGGTGCTGTAAACAGGTTTGGGCAGT
GGTGGGGGAGGGGGCCAGAGAGGCGGCTCAGGTTGCCAGCTCTGTGGCCTCAG
GACTCTCTGCCTCACCCGCTTCAGCCAGGGCCCCTGGAGACTGATCCCCTCTGA
GTCCTCTGCCCTTCCAAGGACACTAATGAGCCTGGGAGGGTGGCAGGGAGGAG
GGGACAGCTTCACCCTTGGAAGTCCTGGGGTTTTTCTCTTCTTTGTGGTTT
25 CTGTTTTGTAATTTAAGAAGAGCTATTCATCACTGTAATTATTATTATTTCTACA
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SEQ ID NO: 169

>2027449H1

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TGTGGGGGAGAAAGTGGATGAGGAGGGGTGAAGAAGCTGATGGGCAGCCTGGA
TGAGAACACGACAAGCAGGTGGACTTCCAGGAGTATGCTGTTTTCTGGGAAC
35 TCATCA

SEQ ID NO: 170

>gi|338633|gb|J05392.1|HUMSYN Human syndecan mRNA, complete cds

40 GGAGAGGTGCGGGCCGAATCCGAGCCGAGCGAGAGGAATCCGGCAGTAGAGAG
CGGACTCCAGCCGGCGGACCCTGCAGCCCTCGCCTGGGACAGCGGCGCGCTGGG
CAGGCGCCCAAGAGAGCATCGAGCAGCGGAACCCGCGAAGCCGGCCCCGAGCC
GCGACCCGCGCAGCCTGCCGCTCTCCCGCCGCGGTCGGGCAGCATGAGGCGC
GCGGCGCTCTGGCTCTGGCTGTGCGCGCTGGCGCTGAGCCTGCAGCTGGCCCTGC
CGCAAATTGTGGCTACTAATTTGCCCCCTGAAGATCAAGATGGCTCTGGGGATGA
45 CTCTGACAACTTCTCCGGCTCAGGTGCAGGTGCTTTGCAAGATATCACCTTGTC
CAGCAGACCCCTCCACTTGGAAGGACACGCAGCTCCTGACGGCTATTCCACAGT
CTCCAGAACCCACCGGCCTGGAGGCTACAGCTGCCTCCACCTCCACCCTGCCGGC
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TTCTGCCACCGAGAGGGCTGCTGAGGATGGAGCCTCCAGTCAGCTCCCAGCAGC
5 AGAGGGCTCTGGGGAGCAGGACTTCACCTTTGAAACCTCGGGGGAGAATAACGGC
TGTAGTGGCCGTGGAGCCTGACCGCCGGAACCAGTCCCCAGTGGATCAGGGGGC
CACGGGGGCCTCACAGGGCCTCCTGGACAGGAAAGAGGTGCTGGGAGGGGTCAT
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10 GCCAACGGCGGGGGCCTACCAGAAGCCCACCAAACAGGAGGAATTCTATGCCTGA
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15 AGGACCTTTCCACCACAGCCAGCACCTGGCATCGCACCATTCTGACTCGGTTTCT
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CTGCTTTGGACCTAAATGGCCTCATGTGGCTGGAAGATCTGCGGGTGGGGCTTGG
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20 ATCGACTTGTTTTTGCACATGTTTCTCTAGTTCTTTGTTTCATAGCCCAGTAGACC
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25 CCCGTTTCTGGTGGTCTGTTGGCAGGCTGGCCAGTCCAGGCTGCCGTGGGGCCGC
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30 ATTGACGAGGGGTGTCTTGGGCAGAGCTGGCTCTGAGCGCCTCCATCCAAGGCC
AGGTTCTCCGTTAGCTCCTGTGGCCCCACCCTGGGCCCTGGGCTGGAATCAGGAA
TATTTTCCAAAGAGTGATAGTCTTTTGCTTTTGGCAAACTCTACTTAATCCAATG
GGTTTTTCCCTGTACAGTAGATTTTCCAAATGTAATAAACTTTAATATAAAGT

35 SEQ ID NO: 171

>gi|602452|gb|M25315.1|HUMCYTNEWA Homo sapiens (clone pAT 464) potential
lymphokine/cytokine mRNA, complete cds

GAATTCCCGGGCAGCAGACAGTGGTCAGTCCTTTCTTGGCTCTGCTGACACTCGA
GCCACATTCCGTCACCTGCTCAGAATCATGCAGGTCTCCACTGCTGCCCTTGCT
40 GTCCTCCTCTGCACCATGGCTCTCTGCAACCAGTTCTCTGCATCACTTGCTGCTGA
CACGCCGACCGCCTGCTGCTTCAGCTACACCTCCCGGCAGATTCCACAGAATTTT
ATAGCTGACTACTTTGAGACGAGCAGCCAGTGCTCCAAGCCCGGTGTCATCTTCC
TAACCAAGCGAAGCCGGCAGGTCTGTGCTGACCCAGTGAGGAGTGGGTCCAGA
AATATGTCAGCGACCTGGAGCTGAGTGCCTGAGGGGTCCAGAAGCTTCGAGGCC
45 CAGCGACCTCGGTGGGCCAGTGGGGAGGAGCAGGAGCCTGAGCCTTGGAACA
TGCGTGTGACCTCCACAGCTACCTCTTCTATGGAAGTGGTTGTTGCCAAACAGCCA
CACTGTGGGACTCTTCTTAACTTAAATTTTAAATTTAATTTATACTATTTAGTTTTGT
AATTTATTTTCGATTTACAGTGTGTTTGTGATTGTTTGTCTGAGAGTTCCCCTG
TCCCCTCCCCCTTCCCTCACACCGCGTCTGGTGACAACCGAGTGGCTGTCATCAG

CCTGTGTAGGCAGTCATGGCACCAAAGCCACCAGACTGACAAATGTGTATCGGA
TGCTTTTGTTCAGGGCTGTGATCGGCCTGGGGAAATAATAAAGATGCTCTTTTAA
AAGGT

5 SEQ ID NO: 172

>gi|179039|gb|M30704.1|HUMARXC Human amphiregulin (AR) mRNA, complete cds,
clones lambda-AR1 and lambda-AR2

AGACGTTTCGCACACCTGGGTGCCAGCGCCCCAGAGGTCCCGGGACAGCCCGAGG
CGCCGCGCCCGCCGCCCCGAGCTCCCCAAGCCTTCGAGAGCGGCGCACACTCCC
10 GGTCTCCACTCGCTCTTCCAACACCCGCTCGTTTTGCGGCAGCTCGTGTCCCAGA
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15 TTCAGGGAGTGAGATTTCCCTGTGAGTGAAATGCCTTCTAGTAGTAACCGTCC
TCGGGAGCCGACTATGACTACTCAGAAGAGTATGATAACGAACCACAAATACCT
GGCTATATTGTCGATGATTCAGTCAGAGTTGAACAGGTAGTTAAGCCCCCCCCAAA
ACAAGACGGAAAGTGAAAATACTTCAGATAAACCCAAAAGAAAGAAAAAGGGA
GGCAAAAATGGAAAAAATAGAAGAAACAGAAAGAAGAAAAATCCATGTAATGC
20 AGAATTTCAAAATTTCTGCATTACCGGAGAATGCAAATATATAGAGCACCTGGA
AGCAGTAACATGCAAATGTCAGCAAGAATATTTCCGGTGAACGGTGTGGGGAAAA
GTCCATGAAAACCTCACAGCATGATTGACAGTAGTTTATCAAAAATTGCATTAGCA
GCCATAGCTGCCTTTATGTCTGCTGTGATCCTCACAGCTGTTGCTGTTATTACAGT
CCAGCTTAGAAGACAATAACGTCAGGAAATATGAAGGAGAAGCTGAGGAACGAA
25 AGAAACTTCGACAAGAGAATGGAAATGTACATGCTATAGCATAACTGAAGATAA
AATTACAGGATATCACATTGGAGTCACTGCCAAGTCATAGCCATAAATGATGAGT
CGGTCTCTTTCCAGTGGATCATAAGACAATGGACCCTTTTGTATGATGGTTTT
AACTTTCAATTGTCACTTTTTATGCTATTTCTGTATATAAAGGTGCACGAAGGTA
AAAAGTATTTTCAAGTTGTAAATAATTTATTTAATATTTAATGGAAGTGTATTT
30 ATTTTACAGCTCATTAACCTTTTTTAACC

SEQ ID NO: 173

>1227785H1

AAGATTTGCATTACCTGGCCCAAACCTTTTGTCTCTTTGGGTGACCGGAAAA
35 CTCCACCTCAAGTTTTCTTTTGTGGGGCTGCCCCCAAGTGTCGTTTGTTTTACTG
TAGGGTCTCCCCGCCC GGCGCCCCCAGTGTTTTCTGAGGGCGGAAATGGCCAATT
CGGGCCTGCAGTTGCTGGGCTTCTCCATGGCCCTGCTGGGCTGGGTGGGTCTGGT
GGCCTGCACCGCCATCCCGNAGTGGCAGATGAGCTCCTATGCGGGTGACA

40 SEQ ID NO: 174

>4872203H1

CTGCTGGCTCACCTCCGAGCCACCTCTGCTGCGCACCGCACCTCGGACCTACAGC
CCAGGATACTTTGGGACTTGCCGGCGCTCAGAAACGCGCCCAGACGGCCCCCTCC
ACCTTTTGTGTGCTAGGGCGCCGAGAGCGCCCGGAGGGAACCGCCTGGCCTTCG
45 GGGACCACCAATTTTGTCTGGAACCACCTCCCGGCGTATCCTACTCCCTGTGCC
GCGAGCCATCGCTTCACTGGAGGG

SEQ ID NO: 175

>gi|1011705|gb|H58873.1|H58873 yr36a12.s1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:207358 3' similar to gb:K03195 GLUCOSE TRANSPORTER TYPE 1, ERYTHROCYTE/BRAIN (HUMAN);, mRNA sequence

5 ACTATAACTTAGTGTCTGTATTTAATATTGACAACCAAAAATATATATANTTTTNT
TGCATCTATACACAACAGGGCAGGAGTCTCCATGTNTTCTTGAGCAGTGAGTTTG
CAGGCTCCACAGGCCCTCTTCTCATGGTAATAGTGTGGCCCTAGTGCAAAGGAG
ACTAGAACCCGGCAGCCCAGACTGGCCCTTCCCCTCTCCTCCCTGCACTCCAGTG
CTTCCCAACTGGTCTCAGGTAAAGAAAGNTTANTTTGAGTGGTTGGGTAGGAAG
10 AGATGGGAAGGGGCAAATCCTAATGGGAGCCTGACCCCTAGAGTGGGGAGTTCC
AGGGCCAGCAGAACGGGTGGGCCATAGCCCTNCCTGGGGNTAGAAGCTTTGTAG
TTCATAGTTTCGATTAGTNTGTCNTAGGGCATNAGGTNCCAGCCCTACAGATTAG
CT

15 SEQ ID NO: 176

>1858095F6

CATCCATTCATCGATTCGCGCATTCTCCAGACCTTTACAGCCTGTGCTGGGTACTG
GAGACTCCCTGGGTGGGGGCCCTGAGGGCCCGTGCTTCTGCCCCACCCCTGCAA
CCTGACACGCTATGGGAAAGAGATCTCCATGGTCAGGATCCCCAACAGGGGGCTC
20 AGCCCGGTACCTGGCGAGGAAGTACAACCGCAACGAGACCTACATACGGGAGAA
CTTCCTGGTCTTAGATGTCTTCTTTGAGGCCCTGACCTCTGAAGCCATGGAGCAG
CGAGCAGCCTATGGCCTGTCAGCCCTGCTGGGAGACCTCGGGGGACAGATGGGC
CTGTTCAATTGGGGCCAGCATCCTCACGTTGCTGGAGATCCTCGACTACATCTATG
AGGTGTCCTGGGATCGACTGAAGCGGGTATGGAGGCGTCCCAAGACCCCCCTG
25 GGGACCTCCACTGGGGGCATCTCCA

SEQ ID NO: 177

>gi|2046919|gb|AA393950.1|AA393950 zt78a10.r1 Soares_testis_NHT Homo sapiens cDNA clone IMAGE:728442 5' similar to gb:L29007_cds1 AMILORIDE-SENSITIVE SODIUM CHANNEL ALPHA-SUBUNIT (HUMAN);, mRNA sequence

30 AGGAGAGCATGATCAAGGAGTGTGGCTGTCTACATCTTCTATCCGCGGCCCCAGA
ACGTGGAGTACTGTGACTACAGAAAGCACAGTTCCTGGGGGTACTGCTACTATA
AGCTCCAGGTTGACTTCTCCTCAGACCACCTGGGCTGTTTCACCAAGTGCCGGAA
GCCATGCAGCGTGACCAGCTACCAGCTCTCTGCTGGTTACTCACGATGGCCCTCG
35 GTGACATCCCAGGAATGGGTCTTCCAGATGCTATCGCGACAGAACAATTACACC
GTCAACAACAAGAGAAATGGAGTGGCCAAAGTCAACATCTTCTTCAAGGAGCTG
AACTACAAAACCAATTCTGAGTCTCCCTCTGTACGATGGTCACCCTCCTGTCCA
ACCTGGGCAGCCAGTGGAGCCTGTGGTTTCGGCTCCTCGGTGTTGTCTGTGGTGGA
GATGGCTGAGCTCGTCTTTGACCTGCTGGTCATCATGTTCTCATGCTGCTCGAAG
40 TTCTNN

SEQ ID NO: 178

>gi|2184104|gb|AA459197.1|AA459197 zx88h05.r1 Soares ovary tumor NbHOT Homo sapiens cDNA clone IMAGE:810873 5', mRNA sequence

45 GTGCCAGCCCCCGACTGGCCTGGCCACACTGCTCTCCAGTAGCACAGATGTCTGC
TCCTCCTCTTGAACCTGGGTGGGAAACCCACCCAAAAGCCCCCTTTGTTACTTA
GGCAATTCCCCTTCCCTGACTCCCGAGGGGCTAGGGCTAGAGCAGACCCGGGTAA
GTAAAGGCAGACCCAGGGCTCCTCTAGCCTCATACCCGTGCCCTCACAGAGCCAT
GCCCCGTACCTCTGCCCTGTGTCTTTCATACCTCTACATGTCTGCTTGAGATATT

TCCTCAGCCTGAAAGTTTCCCCAACCATCTGCCAGAGAACTCCTATGCATCCCTT
AGAACCCTGCTCAGACACCATTACTTTTGTGAACGCTTCTGCCACATCTTGTCTTC
CCCAAATTGATCACT

5 SEQ ID NO: 179

>2701503T6

ACACTGAAGTCCACCCTGGGAGCTGGTAAAACAATTTTCAGTCTCAGACCCGTCTG
TTTTCCAGGGTCTCTCCGAGCCTGGGCTTCCTCAAGAGCGTGGCCCAAGGGCCCCA
CAGCCCAGATCCGGCAGCCCCACCACCTTCACTGAGGAGGCCCCGAAGCTCCGTT
10 CCGCTGCTCCTTAGAGACAGGGGAGGCAGATATGCACAAACGCGCCTCGGCCC
AGCTTGGGGCTGGCGGGGGAGGCTGTGTCTTCAAACCTTTGCCCCCAGTTGGGTC
AGTAGAACCACCAAGTGTCTCCCCTTCTACCTCCCAGCTCCACTTTGGAGGCTGA
GGAAGCGAGAGGTTTCTAGGCAGATTTGGAGCCCTGGAGATTGAGTTCACAGT
GTATGTTCTGGGGGCGCTGGTGCAGTCAGCGGTCCAGTCTCCAGCCTGCAGGCGT
15 GCACACTGGGGTGGACGATGGGTGGCCCCGAGTGTACACATTTGGGTGGGCCC
CGGCCCCCTATACCCCAGTGTCTCTTTGATCCAGTCCCGAAACAGAAGGGAGCTT
GTGTACAC

SEQ ID NO: 180

20 >2798465H1

CAGATCTGGATGGAGTTGTGACCTTTGACTTGTTTAAGTGGTTGCAGCTGACCAT
GTTTGCATGAGGCAGGGACTCGGTCCCCCTTGCCGTGCTCCCCTCCCTCCTCGTCT
GCCAAGCCTCGCCTCCTACCACACCACACCAGGCCACCCCAGCTGCAAGTGCCTT
CCTTGGAGCAGAGAGGCAGCCTCGTCCTCCTGTCCCCCTCTCCTCCCA

25

SEQ ID NO: 181

>gi|29370|emb|Y00106.1|HSBAR Human gene for beta-adrenergic receptor (beta-2 subtype)

GAATTCATGCCGCGTTTCTGTGTTGGACAGGGGTGACTTTGTGCCGGATGGCTTC
TGTGTGAGAGCGCGCGCGAGTGTGCATGTGCGGTGAGCTGGGAGGGTGTGTCTCA
30 GTGTCTATGGCTGTGGTTCGGTATAAGTCTAAGCATGTCTGCCAGGGTGTATTTG
TGCTGTATGTGCGTGCCTCGGTGGGCACTCTCGTTTCCTTCCGAATGTGGGGCA
GTGCCGGTGTGCTGCCCTCTGCCTTGAGACCTCAAGCCGCGCAGGCGCCCAGGGC
AGGCAGGTAGCGGCCACAGAAGAGCCAAAAGCTCCCGGGTTGGCTGGTAAGCAC
ACCACCTCCAGCTTTAGCCCTCTGGGGCCAGCCAGGGTAGCCGGGAAGCAGTGG
35 TGGCCCGCCCTCCAGGGAGCAGTTGGGCCCCGCCCCGGGCCAGCCTCAGGAGAAG
GAGGGCGAGGGGAGGGGAGGGAAAGGGGAGGAGTGCCTCGCCCCCTTCGCGGCT
GCCGGCGTGCCATTGGCCGAAAGTTCCTGTACGTACGGCGAGGGCAGTTCCCCT
AAAGTCCTGTGCACATAACGGGCAGAACGCACTGCGAAGCGGCTTCTTCAGAGC
ACGGGCTGGAAGTGGCAGGCACCGCGAGCCCCTAGCACCCGACAAGCTGAGTGT
40 GCAGGACGAGTCCCCACCACACCCACACCACAGCCGCTGAATGAGGCTTCCAGG
CGTCCGCTCGCGGGCCCGCAGAGCCCCGCGGTGGGTCCGCTGCTGAGGCGCCCCC
AGCCAGTGCCTTACCTGCCAGACTGCGCGCCATGGGGCAACCCGGGAACGGCA
GCGCCTTCTTGCTGGCACCCAATAGAAGCCATGCGCCGGACCACGACGTCACGC
AGCAAAGGGACGAGGTGTGGGTGGTGGGCATGGGCATCGTCATGTCTCTCATCG
45 TCCTGGCCATCGTGTGTTGGCAATGTGCTGGTCATCACAGCCATTGCCAAGTTCGA
GCGTCTGCAGACGGTCACCAACTACTTCATCACTTCACTGGCCTGTGCTGATCTG
GTCATGGGCTGGCAGTGGTGCCCTTTGGGGCCGCCCATATTCTTATGAAAATGT
GGACTTTTGGCAACTTCTGGTGCGAGTTTTGGACTTCCATTGATGTGCTGTGCGTC
ACGGCCAGCATTGAGACCCTGTGCGTGATCGCAGTGGATCGCTACTTTGCCATTA

CTTCACCTTTCAAGTACCAGAGCCTGCTGACCAAGAATAAGGCCCGGGTGATCAT
TCTGATGGTGTGGATTGTGTCAGGCCTTACCTCCTTCTTGCCCATTCAGATGCACT
GGTACCGGGGCCACCCACCAGGAAGCCATCAACTGCTATGCCAATGAGACCTGCT
GTGACTTCTTCACGAACCAAGCCTATGCCATTGCCTCTTCCATCGTGTCTTCTAC
5 GTTCCCCTGGTGATCATGGTCTTCGTCTACTCCAGGGTCTTTCAGGAGGCCAAAA
GGCAGCTCCAGAAGATTGACAAATCTGAGGGCCGCTTCCATGTCCAGAACCTTA
GCCAGGTGGAGCAGGATGGGCGGACGGGGCATGGACTCCGCAGATCTTCCAAGT
TCTGCTTGAAGGAGCACAAAGCCCTCAAGACGTTAGGCATCATCATGGGCACTTT
CACCCTCTGCTGGCTGCCCTTCTTCATCGTTAACATTGTGCATGTGATCCAGGATA
10 ACCTCATCCGTAAGGAAGTTTACATCCTCCTAAATTGGATAGGCTATGTCAATTC
TGGTTTCAATCCCCTTATCTACTGCCGGAGCCCAGATTTTCAGGATTGCCTTCCAGG
AGCTTCTGTGCCTGCGCAGGTCTTCTTTGAAGGCCTATGGGAATGGCTACTCCAG
CAACGGCAACACAGGGGAGCAGAGTGGATATCACGTGGAACAGGAGAAAGAAA
ATAAACTGCTGTGTGAAGACCTCCAGGCACGGAAGACTTTGTGGGCCATCAAG
15 GTACTGTGCCTAGCGATAACATTGATTACAAAGGGAGGAATTGTAGTACAAATG
ACTCACTGCTGTAAAGCAGTTTTTCTACTTTTAAAGACCCCCCCCCCAACAGAA
CACTAAACAGACTATTTAACTTGAGGGTAATAAACTTAGAATAAAATTGTAAAAT
TGTATAGAGATATGCAGAAGGAAGGGCATCCTTCTGCCTTTTTTTATTTTTTTAAGC
TGTA AAAAGAGAGAAA ACTTATTTGAGTGATTATTTGTTATTTGTACAGTTCAGT
20 TCCTCTTTGCATGGAATTTGTAAGTTTATGTCTAAAGAGCTTTAGTCCTAGAGGAC
CTGAGTC

SEQ ID NO: 182

>gi|2110744|gb|AA429219.1|AA429219 zv78h08.r1 Soares_total_fetus_Nb2HF8_9w Homo
25 sapiens cDNA clone IMAGE:759807 5' similar to TR:G1136412 G1136412 KIAA0176
PROTEIN ;; mRNA sequence
GTGATCTGCATGTGGCAGGGCTGCGCAGTGGAGCGGCCAGTGGGCAGGATGACG
AGCCAGACCCCTCTGCCCCAGTCCCCCGGCCAGGCGGCCAACGATGTCTACTG
TTGTGGAGCTGAACGTCGGGGGTGAGTTCCACACCACCACCTGGGTACCCTGAG
30 GAAGTTTCCGGGCTCAAAGCTGGCAGAGATGTTCTCTAGCTTAGCCAAGGCCTCC
ACGGACGCGGAGGGGCCGCTTCTTCATCGACCGCCCCAGCACCTATTTACAGACCA
TCCTGGACTACCTGCGCACTGGGCAAGTGCCACACAGCACATCCCTGAAGTGTAC
CGTGAGGCTCAGTTCTACGAAATCAAGCCTTTGGTCAAGCTGCTGGAGGACATGC
CACAGATCTTTGGTGAGCAGGTGCTCGGAAGCAGT

35

SEQ ID NO: 183

>903559H1

CAACTTCACAGAAGCTCTCGCTGAGACAGCCTGTAGGCAGATGGGCTACAGCAG
CAAACCCACTTTCAGAGCTGTGGAGATTGGCCCAGACCAGGATCTGGATGTTGTT
40 GAAATCACAGAAAACAGCCAGGAGCTTCGCATGCGGAACTCAAGTGGGCCCTGT
CTCTCAGGCTCCCTGGTCTCCCTGCACTGTCTTGCCTGTGGGAAGAGCCTGAAGA
CCCGGGGTGTGGTGGGTGGGGAGGAG

SEQ ID NO: 184

>gi|189952|gb|M86400.1|HUMPHPLA2 Human phospholipase A2 mRNA, complete cds
45 GCCCACTCCCACCGCCAGCTGGAACCCTGGGGACTACGACGTCCCTCAAACCTTG
CTTCTAGGAGATAAAAAGAACATCCAGTCATGGATAAAAATGAGCTGGTTCAGA
AGGCCAAACTGGCCGAGCAGGCTGAGCGATATGATGACATGGCAGCCTGCATGA
AGTCTGTA ACTGAGCAAGGAGCTGAATTATCCAATGAGGAGAGGAATCTTCTCTC

AGTTGCTTATAAAAAATGTTGTAGGAGCCCGTAGGTCATCTTGGAGGGTCTGTCTCA
AGTATTGAACAAAAGACGGAAGGTGCTGAGAAAAAACAGCAGATGGCTCGAGA
ATACAGAGAGAAAATTGAGACGGAGCTAAGAGATATCTGCAATGATGTACTGTC
TCTTTTGGAAAAGTTCTTGATCCCCAATGCTTCACAAGCAGAGAGCAAAGTCTTC
5 TATTTGAAAATGAAAGGAGATTACTACCGTTACTTGGCTGAGGTTGCCGCTGGTG
ATGACAAGAAAGGGATTGTGCGATCAGTCACAACAAGCATAACCAAGAAGCTTTTG
AAATCAGCAAAAAGGAAATGCAACCAACACATCCTATCAGACTGGGTCTGGCCC
TTAACTTCTCTGTGTTCTATTATGAGATTCTGAACTCCCCAGAGAAAGCCTGCTCT
CTTGCAAAGACAGCTTTTGATGAAGCCATTGCTGAACTTGATACATTAAGTGAAG
10 AGTCATACAAAGACAGCACGCTAATAATGCAATTACTGAGAGACAACCTTGACAT
TGTGGACATCGGATACCCAAGGAGACGAAGCTGAAGCAGGAGAAGGAGGGGAA
AATTAACCGGCCTTCCAACCTTTTGTCTGCCTCATTCTAAAATTTACACAGTAGACC
ATTTGTCATCCATGCTGTCCACAAATAGTTTTTTGTTTACGATTTATGACAGGTT
TATGTTACTTCTATTTGAATTTCTATATTTCCCATGTGGTTTTTATGTTTAATATTA
15 GGGGAGTAGAGCCAGTTAACATTTAGGGAGTTATCTGTTTTTCATCTTGAGGTGGC
CAATATGGGGATGTGGAATTTTTATACAAGTTATAAGTGTTTGGCATAGTACTTT
TGGTACATTGTGGCTTCAAAGGGGCCAGTGTA AAACTGCTTCCATGTCTAAGCAA
AGAAAACCTGCCTACATACTGGTTTGTCTTGGCGGGGAATAAAAGGGATCATTGG
TTCCAGTCACAGGTGTAGTAATTGTGGGTACTTTAAGGTTTGGAGCACTTACAAG
20 GCTGTGGTAGAATCATACCCCATGGATACCACATATTA AACCATGTATATCTGTG
GAATACTCAATGTGTACACCTTTGACTACAGCTGCAGAAGTGTTCCCTTTAGACAA
AGTTGTGACCCATTTTACTCTGGATAAGGGCAGAAACGGTTCACATTCCATTATT
TGTAAGTTACCTGCTGTTAGCTTTCATTATTTTTGCTACACTCATTTTATTTGTAT
TTAAATGTTTTAGGCAACCTAAGAACAAATGTAAAAGTAAAGATGCAGGAAAAA
25 TGAATTGCTTGGTATTCACTTTCATGTATATCAAGCACAGCAGTAAAACAAAA
ACCCATGTATTTAACTTTTTTTTAGGATTTTGTCTTTGTGATTTTTTTTTTTTTTT
TTGATACTTGCTTAACATGCATGTGCTGTAAAAATAGTTAACAGGGAAATAACTT
GAGATGATGGCTAGCTTTGTTAATGTCTTATGAAATTTTCATGAACAATCCAAG
CATAATTGTTAAGAACACGTGTATTAAATTCATGTAAGTGGAATAAAAGTTTTAT
30 GAATGGACTTTTCACTACTTTCTCTACAGCTTTTCATGTAAATTAGTCTTGGTTC
TGAACTTCTCTAAAGGAAATTGTACATTCTTTGAAATTTATTCCTTATTCCCTCT
TGGCAGCTAATGGGCTCTTACCAAGTTTAAACACAAAATTTATCATAACAAAAAT
ACTACTAATAATACTACTGTTTCCATGTCCCATGATCCCCTCTCTTCTCCCCACC
CTGAAAAAATGAGTTCCCTATTTTTTCTGGGAGAGGGGGGGATTGATTAGAAAA
35 AAATGTAGTGTGTTCCATTTAAAATTTTGGCATATGGCATTTTCTAACTTAGGAA
GCCACAATGTTCTTGGCCCATCATGACATTGGGTAGCATTAACTGTAAGTTTTGT
GCTTCCAAATCACTTTTTTGGTTTTTAAGAATTTCTTGATACTCTTATAGCCTGCCTT
CAATTTTGATCCTTTATTCTTTCTATTTGTGAGGTGCACAAGATTACCTTCCTGTTT
TAGCCTTCTGTCTTGTACCAACCATTCTTACTTGGTGGCCATGTACTTGGA AAAA
40 GGCCGCATGATCTTTCTGGCTCCACTCAGTGTCTAAGGCACCCTGCTTCCTTTGCT
TGCATCCCACAGACTATTTCCCTCATCCTATTTACTGCAGCAAATCTCTCCTTAGT
TGATGAGACTGTGTTTATCTCCCTTTAAAACCCTACCTATCCTGAATGGTCTGTCA
TTGTCTGCCTTTAAAATCCTTCCTCTTTCTTCTCCTCTATTCTCTAAATAATGATG
GGGCTAAGTTATACCCAAAGCTCACTTTACAAAATATTTCTCAGTACTTTGCAG
45 AAAACACCAAACAAAAATGCCATTTTAAAAAAGGTGTATTTTTCTTTTAGAATG
TAAGCTCCTCAAGAGCAGGGACAATGTTTTCTGTATGTTCTATTGTGCCTAGTAC
ACTGTAAATGCTCAATAAATATTGATGATGGGAGGCAGTGAGTCTTGATGATAA
GGGTGAGAACTGAAATCCC

SEQ ID NO: 185

>2301338H1

GTGACCTTTGACTTGTTTAAAGTGGTTGCAGCTGACCATGTTTGCATGAGGCAGGG
ACTCGGTCCCCCTTGCCGTGCTCCCCTCCCTCCTCGTCTG

5

SEQ ID NO: 186

>gi|1209100|gb|U41163.1|HSU41163 Human creatine transporter (SLC6A10) gene, partial
cds

10 CATGCGTGACTGCCCCCACACTCACACAGCTCTCACTCCCCACATGCTCCATGCC
TCCTGTCCCCACTGAGGAGAGCTCCTAGAGGCTCGCCCGCTCCCCACTGACATGC
ATCCCTGCAGACAAACGAGGCGCCAGAGAGCTTCCCCACTGCACTTGCCAGGG
CTGCGGGGCCAGCCTTGCCCTAGCTTCCTCTGGCGGGAGCTATGGCTCGGAGGA
GAATGGGGACTTCTGAACATACTGCCCCGAAGGGGGACCGGAGGTGCTCGGAG
TGGGCTTGTGAGGGAGGTGGTGGCGCAGTCCCCGCTGAGCAGCCTGGCCCCCA
15 GATCGTGTACTTCACTGCTACATTCCTTACGTGGTCGTGGTCGTGCTTGTGC
TTGGAGTGCTGCTGCCCTGGCGCCCTGGACAGCATATTTACTATCTCAAGCCTGA
CTGGTCAAAGCTGGGGTCCCCTCAGGTGAGGTGGAGGTGGGGAGGCTGCAGCAG
GGTGTGTGGGGGAGCCCTGCAGGCCCTCATGCCTGCACTCTCCAGCCCTTTCT
CTGTAGGTATGGATAGATGTGGGGACCCAGATTTTCTTTTCTTATGCCATTGGCCT
20 GGGGGCCCTCACAGCCCTGGGCAGCTACAACCGCTTCAACAACAAGTCTACAA
GTAAGCACTGCTGCCCTGCCACCCGTGCCCTGTCCCGCCCTGCCCTGCCCAGCAG
CCTAACCCATCCACTCTGGCCCCCTCACCCCTCCAGGACGCCATCATCCTGGCTG
TCATCAACAGTGGGACCAGCTTCTTTGCTGGCTTCGTGGTCTTCTCCATCCTGGGC
TTCATGGCTGCAGAGCAGGGCATGCACATCTCCAAGGTGGCAGAGTCAGGTAGG
25 GCCCTACCCCCAGCCCCGCTCCAGAGCAGCAACTGCCACCCAGATGCATGATGT
ACAAGAACACGCAATAGAAATGCTGAAAAGTGATGAGGATTCAAACAGAAGTTC
TCAGATTGTGGGCCTGTGGGGGAGGTCTTGGGATTTTCAATGTTGACAGAGAC
AGGACCTCCCAGCCCCTGCTGCATGACCCAGGGTTGACAGCACCTCAGAGGCAG
GCGTGGGCATGGGCGTGAGTGTTGCAGGCAGGGCTCAGGGTGCGCGCAGGGCAC
30 GACATCGGCTGCAAGGTCTAGAGCCTGCACCTTTCCACAGGGCCGGGCCTGGCC
TTCATCGCCTACCCACAGGCTGTCACACTGATGCCAGTGGCCCCACTCTGGGCTG
CCCTGTTCTTCTTCATGCTGTTGCTGCTTGGTCTCGACAACCAGTTTGCATGGGCT
CTGGGACAGGGAGCCAGGAGAGGGGCGGAGTGAGGGCTGCGGGCAAGGAAAGG
GGTGGAGGGCTGCTGCGGGGCTCGGCCTGAGCTAGCCTGGCCACAGTTTGTAGGT
35 GTGGAGGGCTTCATCACCGGCCTCCTCAACCTCCTCCCGGCCTCCTACTACTTCTG
TTTCCAAAGGGAGATCTCTGTGGCCCTCTGTTGTGCCCTCCGCTTTGTGATTGATC
TCTCCATGGTGACTGATGTGAGTGGGGTGGGGGGTCTGCCTGTGACCTCTGGTGG
CCGTCTGCCATCCTCCCTGACTGGGCTCTGTCCCCCAGGGTGGGATGTATGTCTTC
CAGCTGTTTGACTACTACTCGGCCAGCGGCACCAACCTGCTCTGGCAGGCCTTTT
40 GGGAGTGCGTGGTGGTGGTCTGGGTGTATGGTAGGTCATGGCTGAGGGCTGGGC
TGGGGCATGGTGACGGGGAAGGCAGGTCTCCAGCTTGGCCCTCCCGCCTCGCCTT
GCCACAGGAGCTGACCGCTTCACGGACGACATTGCCTGTATGATCGGGTACCGA
CCTTGCCCCCTGGATGAAATGGTGCTGGTCCTTCTTCACCCCGCTGGTTTGCATGGT
AAGGGCTGGGGGAGGTGGGGCGGGGTGGGGGGGGCGGGGCGGGGTGGGGGGCC
45 CATTAAGGACGGGCATTCTGGTCTGTAGGGCATCTTCATCTTCAACGTTGTGTAC
TACAAGCCGCTGGTCTACAACAACACCTACGTGTACCCGTGGTGGGGTGAGGCC
ATGGGCTGGGCCTTCGTGCTGTCTCCATGCTGTGCATGCCACTGCACCTCCTGG
GCTGCCTCCTCAGGGCCAAGGGCACCATGGCTGAGGTAAGGCTCCCTCCCGGCCT
GCCCTCCCCTCCCCTGCTATGAACATTCAACCCAGCCTGCTTCTAGCCAAGGAG

TGGCCCTGACTAGGGTGGCAGGCAGCAGGAGCTGGAGAGAGAGGCAGAGGAAG
 TCACCGTGGGGATGAGCAGGTGACTCTGGGGGCTTCAACATGTCCTCTCCTGCAG
 TGCTGGAAGCACCTGACCCAGCCCATCTGGGGCCTCCACCACTTGGAGTACCGAG
 CTCAGGATGCAGATGTCAGGGGCTGACCACCCTGACCCCACTGTCCGAGAGCA
 5 GCAAGGTCGTCGTGGTGGAGAGTGTTCATGGGACAGCTCAGCTCACATCACCAGC
 TCACCTCTGGTAGCCATAGCAGCCCCCTGCTTCATCCCCACCCACCCCTCCAGGG
 GGCCTGCCTTTCCCTGACACTTTTGGGGTCTGCCTGGGAGAGGAGGGGAGAAAG
 CACCATGAGTGCTCACTAAAACAACCTTTTCCATTTTAAATAAAACGCCAAAAAT
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 10 CCTAGGCCCCGCCTAGTGCCCCACCCCAACCCACAGTGCTGCACTCCTCCTGCCC
 CTGCCACGCCCACCCCTGCCACCTCTCCAGGTTCTGCTCTGTAGCACACCCTTG
 GGTGACCCCTCACCCAGAAAGCAGCAGTGGCAGCTTGGGAAATGTGAGGAAGGG
 AAGGAGGGAGAGACGGGAGGGAGGAGAGAGAGGAGAAGGGAGGCAGGGGAGG
 GGCAGCAGAACCAAGACAAATATTTAGCTGGGCTATACCCCTCTCCCCATCCCT
 15 GTTATAGAAGCTTAGAGAGCCAGCCAGCAGTGGAACTTCTGGTTCCTGCGCCAA
 TCACCACCAATATCAATTGTGTGAGCTTGGGTGCGAGTGACGCGTGCGTGAGCA
 CGTAGAGTATATATAGATCTCTATCTCTTAGCAAAGGTGAATACCAGATGTAAAT
 GGTGCCTCTGGGCAAAGGAGGCTTGTATTTTGCACATTTTATAACAACCTTGAGAG
 AATGAGATTTCTGCTTGTATATTTCTAAAAAGAGGAAGGAGCCCCAAACCCATCC
 20 TCTCCTTTACCACTCCCCATTTCTGTGAGCCCTACCTTACCCCTCTGCCCTAGC
 CTAGGAGTGTGAATTTATAGATCTAACTTTAGAGGGCAAAACAAAAGCTTCGAG
 CTGTTGATGTGCAGTCTGTTGTGTGGATGTGTGTGTGTGGTCCCCCAGACCCAGA
 ATGGATTGGAAGAGTGCATGGTGGGGCCTCGGGGCTGTCCCCACGCTGTCCCTTT
 GCCCACAGGTCTGTGGGGCAACAGGCTGCAATATTCCATCCTGGGTGTCTGGGCT
 25 GCTAACCTGGCCTGCTCAGGCTTCCCACCCTGTGCCCTGGGCTGGGCACACCCCC
 GGGAAGGGACCCCGGACACGGCTCCACATCCAGGCTCAAGGCGGATGCACTTC
 CTGCACCTCCAGTCTTCTGTGTAGCGGCTTTAACCACGATGTCTGTACGTCCA
 GTCCCGAGACGGCTGAGTGACCCCAAGAAAGGCTTCCCTGACACCCGGACAGAG
 GCTGGAGGGCTGGGGCTGGGTGAGGGTGGTGGGCCTGCGGGGACATTCTACTGT
 30 GCTA

SEQ ID NO: 187

>gi|681577|gb|T70429.1|T70429 yd13g08.r1 Soares fetal liver spleen 1NFLS Homo sapiens

cDNA clone IMAGE:67070 5', mRNA sequence

35 CCAAACCATGTCAGACATGATATGATCAGATTTGTGTTTTGAAAAATTAACACTG
 CAATGTGGAGAATTGATTGGAGGGAATCAGAAGAGTCCAGTAAGTAGGAAAAA
 GTAATAACTTACACTAGGGTGGTAGCAGTAAGAATGGAAAGAAGTAGATGCATT
 TGAATGATACTCAAAAGGTGAAAATAACTGTTCTTAGTGATGAGATAGATGTAG
 GGATAAGCTGAAGCACTTAATGTAAAGGGACGGATGGTGTGTTCTTTCATTAAGA
 40 TAGGGAAGAGTAGGAGATTAGATTTCCAGAGGGAAGATCATGAGGTTGNATTTA
 AGGACGTCTTTGAGTTTTAAATGCCTCTGCCCTTCTTAAGTGGGAGATGTCCAAG
 TTAAGNCATTTGGGAT

SEQ ID NO: 188

45 >gi|1177439|emb|Z67743.1|HSCLC7MR H.sapiens mRNA for CLC-7 chloride channel protein

GACGAGGAGGCGGCGCCGCTGCTGCGGAGGACGGCGCGGCCCGGCGGGGGGAC
 GCCGCTGCTGAACGGGGCTGGGCCCCGGGCTGCGCGCCAGTCACCACGTTCTGC
 GCTTTTCCGAGTCGGACATATGAGCAGCGTGGAGCTGGATGATGAACCTTTGGAC

CCGGATATGGACCCTCCACATCCCTTCCCCAAGGAGATCCCACACAACGAGAAG
CTCCTGTCCCTCAAGTATGAGAGCTTGGACTATGACAACAGTGAGAACCAGCTGT
TCCTGGAGGAGGAGCGGCGGATCAATCACACGGCCTTCCGGACGGTGGAGATCA
AGCGCTGGGTTCATCTGCGCCCTCATTGGGATCCTCACGGGCCTCGTGGCCTGCTT
5 CATTGACATCGTGGTGGAAAACCTGGCTGGCCTCAAGTACAGGGTCATCAAGGG
CAATATCGACAAGTTCACAGAGAAGGGCGGACTGTCCTTCTCCCTGTGCTGTGG
GCCACGCTGAACGCCGCCCTTCGTGCTCGTGGGCTCTGTGATTGTGGCTTTCATAG
AGCCGGTGGCTGCTGGCAGCGGAATCCCCCAGATCAAGTGCTTCTCAACGGGG
TGAAGATCCCCCACGTGGTGGCGCTCAAGACGTTGGTGATCAAAGTGTCCGGTGT
10 GATCCTGTCCGTGGTCGGGGGCTGGCCGTGGGAAAGGAAGGGCCGATGATCCA
CTCAGGTTCAAGTATTGCCGCCGGGATCTCTCAGGGAAGGTCAAGCTCACTGAAA
CGAGATTTCAAGATCTTCGAGTACCTCCGCAGAGACACAGAGAAGCGGGACTTC
GTCTCCGCAGGGGCTGCGGCCGGAGTGTACGCGCGCTTGGAGCCCCCGTGGGT
GGGGTCTGTTTCAAGCTTGGAGGAGGGTGCGTCTTCTGGAACCAAGTTCCTGACCT
15 GGAGGATCTTCTTTGCTTCCATGATCTCCACGTTACCCCTGAATTTTGTCTGAGC
ATTTACCACGGGAACATGTGGGACCTGTCCAGCCCAGGCCTCATCAACTTCGGAA
GGTTTGACTCGGAGAAAATGGCCTACACGATCCACGAGATCCCGGTCTTCATCGC
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20 CCGTGCTGGTGGCCGCCGTACGGCCACAGTTGCCTTCGTGCTGATCTACTCGTC
GCGGGATTGCCAGCCCCTGCAGGGGGGCTCCATGTCCTACCCGCTGCAGCTCTTT
TGTGCAGATGGCGAGTACAACCTCCATGGCTGCGGCCCTTCTTCAACACCCCGGAGA
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CGGCCTGTTACGCTGGTCTACTTCTTCTTGGCCTGCTGGACCTACGGGCTCACG
25 GTGTCTGCCGGGGTCTTCATCCCGTCCCTGCTCATCGGGGCTGCCTGGGGCCGGC
TCTTTGGGATCTCCCTGTCTACCTCACGGGGGCGGCGATCTGGGCGGACCCCGG
CAAATACGCCCTGATGGGAGCTGCTGCCAGCTGGGCGGGATTGTGCGGATGAC
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30 GCCTGTACGACATGCACATTCAGCTGCAGAGTGTGCCCTTCTTGCAGTGGGAGGC
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GGCGTCCAATCACAACGGCTTCCCCGTGGTGGAGCATGCCGATGACACCCAGCCT
GCCCGGCTCCAGGGCCTGATCCTGCGCTCCAGCTCATCGTTCTCTCTAAAGCACA
35 AGGTGTTTGTGGAGCGGTCCAACCTGGGCCTGGTACAGCGGCGCCTGAGGCTGA
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CCAGGACGAGCGGGAGTGACCATGGACCTCTCCGAGTTCATGAACCCCTCCCC
TACACGGTGCCCCAGGAGGCGTCGCTCCCACGGGTGTTCAAGCTGTTCCGGGCCC
TGGGCCTGCGGCACCTGGTGGTGGTGGACAACCGCAATCAGGTGTGCGGGTGGT
40 GACCAGGAAGGACCTCGCCAGGTACCGCCTGGGAAAGAGAGGCTTGGAGGAGCT
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SEQ ID NO: 189

>gi|190135|gb|M33882.1|HUMPMX1A Human p78 protein mRNA, complete cds

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ACCTGCTCACCCAGCTCAGGGGCTTTGGAATTCTGTGGCCACACTGCGAGGAGAT
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AGAACGCCGCCATCCAGCCACCATCCAAGGAGGTGCAGGAGAACAGCTCTGTG

ATACCATTAACTTGTTGACATTACTTTTATTTGAAGGAACGTATATTAGAGCTTA
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CAGCTGCTGCATCCCACCCTCTATTACTGAATGGAGATGCTACTGTGGCCCAGAA
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5 GCGCCCCCTGCATCGACCTCATTGACTCCCTGCGGGCTCTAGGTGTGGAGCAGGAC
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10 GAAAAGGAAATTAATAAAGCCCAGAATGCCATCGCCGGGGAAGGAATGGGAAT
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15 CATGGCCCAGGAGGTGGACCCCGAGGGAGACAGGACCATCGGAATCTTGACGAA
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CCTCGTGTTCCACCTGAAGAAGGGTTACATGATTGTCAAGTGCCGGGGCCAGCAG
GAGATCCAGGACCAGCTGAGCCTGTCCGAAGCCCTGCAGAGAGAGAAGATCTTC
TTTGAGAACCACCCATATTTTCAGGGATCTGCTGGAGGAAGGAAAGGCCACGGTT
20 CCCTGCCTGGCAGAAAACTTACCAGCGAGCTCATCACACATATCTGTAAATCTC
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TGATAGATAAAATTAATGCCTTTAATCAGGACATCACTGCTCTCATGCAAGGAGA
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25 CCACAAATGGAGTACAATAATTGAAAACAATTTTCAAGAAGGCCATAAAATTTT
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30 GCCAAGTCCAAAATTGAAGACATTAGAGCAGAACAAGAGAGAGAAGGTGAGAA
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ATGGAGGAGATCTTTCAGCACCTGATGGCCTATCACCAGGAGGCCAGCAAGCGC
35 ATCTCCAGCCACATCCCTTTGATCATCCAGTTCTTCATGCTCCAGACGTACGGCCA
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GCTCCTGAAGGAGCGGAGCGACACCAGCGACAAGCGGAAGTTCCTGAAGGAGC
GGCTTGACGCTGACGCAGGCTCGGCGCCGGCTTGCCCAGTTCCCCGGTTAACC
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40 TAGCCACTGGACTGACGACTTGAGTGCTCAGTAGTCAGACTGGATAGTCCGTCTC
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GGATGCTGTCTTCGTACTGGGAAAGGGATTTTCAGCCCTCAGAATCGCTCCACCT
TGCAGCTCTCCCTTCTCTGTATTCTAGAACTGACACATGCTGAACATCACAG
45 CTTATTTCTCATTTTTATAATGTCCCTTCACAAACCCAGTGTTTTAGGAGCATGA
GTGCCGTGTGTGTGCGTCCTGCGGAGCCCTGTCTCCTCTCTCTGTAATAAACTCAT
TTCTAGCCCC

SEQ ID NO: 190

>gi|184570|gb|M13755.1|HUMIFN15K Human interferon-induced 17-kDa/15-kDa protein mRNA, complete cds

5 CGGCTGAGAGGCAGCGAACTCATCTTTGCCAGTACAGGAGCTTGTGCCGTGGCCC
ACAGCCCACAGCCCACAGCCATGGGCTGGGACCTGACGGTGAAGATGCTGGCGG
GCAACGAATTCCAGGTGTCCCTGAGCAGCTCCATGTCGGTGTGAGAGCTGAAGG
CGCAGATCACCCAGAAGATTGGCGTGCACGCCTTCCAGCAGCGTCTGGCTGTCCA
CCCGAGCGGTGTGGCGCTGCAGGACAGGGTCCCCCTTGCCAGCCAGGGCCTGGG
10 CCCTGGCAGCACGGTCCTGCTGGTGGTGGACAAATGCGACGAACCTCTGAGCAT
CCTGGTGAAGGAATAACAAGGGCCGACGAGCACCTACGAGGTCCGGCTGACGCA
GACCGTGGCCACCTGAAGCAGCAAGTGAGCGGGCTGGAGGGTGTGCAGGACGA
CCTGTTCTGGCTGACCTTCGAGGGGAAGCCCCTGGAGGACCAGCTCCCGCTGGGG
GAGTACGGCCTCAAGCCCCTGAGCACCGTGTTTCATGAATCTGCGCCTGCGGGGA
GGCGGCACAGAGCCTGGCGGGCGGAGCTAAGGGCCTCCACCAGCATCCGAGCAG
15 GATCAAGGGCCGGAAATAAAGGCTGTTGTAAGAGAAT

SEQ ID NO: 191

>gi|183032|gb|M10901.1|HUMGCRA Human glucocorticoid receptor alpha mRNA, complete cds

20 TTTTGTAGAAAAAATAATATATTTCCCTCCTGCTCCTTCTGCGTTCACAAGCTAAG
TTGTTTATCTCGGCTGCGGCGGGAAGTGCAGGACGGTGGCGGGCGAGCGGCTCCTC
TGCCAGAGTTGATATTCAGTATGAGTCCAAAGAATCATTAAGTCTGGTAGAG
AAGAAAACCCAGCAGTGTGCTTGTGCTCAGGAGAGGGGAGATGTGATGGACTTCT
ATAAAACCCCTAAGAGGAGGAGTACTGTGAAGGTTTCTGCGTCTTCACCTCACT
25 GGCTGTGCTTCTCAATCAGACTCCAAGCAGCGAAGACTTTTGGTTGATTTTCCA
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TCAATGGGACTGTATATGGGAGAGACAGAAACAAAAGTGATGGGAAATGACCTG
GGATTCCACAGCAGGGCCAAATCAGCCTTTCCTCGGGGGAAACAGACTTAAAG
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30 CCAAAGAGTTCAGCATCCACTGCTGTGTCTGCTGCCCCACAGAGAAGGAGTTT
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GCACCAACGGTGGCAATGTGAAATTGTATACCACAGACCAAAGCACCTTTGACA
TTTTGCAGGATTTGGAGTTTCTTCTGGGTCCCCAGGTAAAGAGACGAATGAGAG
TCCTTGGAGATCAGACCTGTTGATAGATGAAACTGTTTCTTCTCCTCTGGCG
35 GGAGAAGACGATTATTCCTTTTGAAGGAAACTCGAATGAGGACTGCAAGCCT
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CAAGCCCCAGTAATGTAACACTGCCCCAAGTGAAAACAGAAAAAGAAGATTTC
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40 TGTTTCATGGTGTGAGTACCTCTGGAGGACAGATGTACCACTATGACATGAATACA
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45 AACAACAGGACCACCTCCCAAACCTCTGCCTGGTGTGCTCTGATGAAGCTTCAGGA
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5 GAAATGGGCAAAGGCAATACCAGGTTTCAGGAACTTACACCTGGATGACCAAAT
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10 AAACCTTACTGCTTCTCTCTTCAGTTTCTAAGGACGGTCTGAAGAGCCAAGAGCT
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30 GCTCATATTTTGATATATCTGCTTCAGTGGAGAATTATATAGGTTGTGCAAATTA
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5 CTTCAGAAAGTTTGGCAATAGTTTGCATAGAGGTACCAGCAATATGTAAATAGTGC
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10

SEQ ID NO: 192

>gi|340868|gb|M23317.1|HUMCD3E01 Human membrane protein (CD3-epsilon) gene,
exons 1 and 2

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15 AATTTTCAGTGCATCTCCCTCTTCTGTGTCAGAGCTTATAGAGGAAGGAAGACCCC
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CTTGTGCCAACCTACTACATGGTCTGGACAGCTAAATGTCATGTATTTTTCATGGC
CCCTCCAGGTATTGTCAGAGTCCCTCTTGTGTTGGCCTTCTAGGAAGGCTGTGGGAC
CCAGCTTTCTTCAACCAGTCCAGGTGGAGGCCTCTGCCTTGAACGTTTCCAAGTG
20 AGGTAAAACCCGCAGGCCAGAGGCCTCTCTACTTCTGTGTGAGGTTCAAGAAC
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GTCTGCTGGCCTCCGCCATCTTAGTAAAGTAACAGTCCCATGAAACAAAGATGCA
25 GTCGGGCACTCACTGGAGAGTTCTGGGCCTCTGCCTCTTATCAGGTGAGTAGGAT
GGA

SEQ ID NO: 193

>gi|307505|gb|L12350.1|HUMTHRSPO Human thrombospondin 2 (THBS2) mRNA,
complete cds

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GAGCATCCTGCACTGCAGGGCCGCTCTCTCGCTCCAGCAGAGCCTGCGCCTTTCT
GACTCGGTCGGAACACTGAAACCAGTCATCACTGCATCTTTTTGGCAAACCAGG
35 AGCTCAGCTGCAGGAGGCAGGATGGTCTGGAGGCTGGTCCTGCTGGCTCTGTGG
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40 TCTTCCTCACGGCCCAGCTCAAGCAGGACGGCAAGTCCAGGGGCACGCTGTTGG
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CCACGTCCTCGTGAACCAGCTCAGCGAGAACCTCAAGAGAGTGTCGAATGATAA
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5 TGCACCACGTGTACCTGCAAGAAATTTAAAACCATTTGCCACCAAATCACCTGCC
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10 AAGTGTGACACCCGCATCCGGCAGGACGGCGGCTGGAGCCACTGGTCACCTTGG
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15 GGTCTGCAACAGCCCTGAGCCTCAGTACGGAGGGAAGGCCTGCGTGGGGGATGT
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25 CCAAACCTCAATCTGGTCTGCGCCACCAACGCCACCTACCACTGCATCAAGGATA
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15 ATGGGTGTGACGCGGTTCCAGATGTGGATTTGGCAAACCTCATTTAAGTAAAAG
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40 SEQ ID NO: 194

>2499967T6

AGAAAAGAGGGAAAGGTGGGGACCTAGTAACAATAACCATTTATTCCAAGGAGGC
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AGGACCAGGGCATCCCAAGGCATCATGGCAGCNGCGTTGTTCAAAGGAAGTTT
45 CATTGAGCTTCATCTTGGGAGNGTGANGCGNGTCCCGANACCGCTGGACGCCC
ACGNNNCTGGNGTGGGTNGCCGTCGGANGTCTGGCCCCACTCCGCACCAGTTCCT
GGCAGCGTTCCACAAAGCTGCNCCCACCACGGCGCCGGGCCTCAGCCTGCGGGG
GGCTTGGGCTCCACGGTGGCCAGACAAGGAGGTGTTGCTGGAGGCTGAGTGGA
GGCTGGTGAGGGAGATGCGGGGTGANGGGCTGGGGAGACAGCNCCATGAGGGA

GCTGAAGGAGCNGGCGGGGGCAGCTCACAGTGTTCAGCTGTTCCATCAGCTCTT
GCTNCGTTANGCCACCTGCAAGGGGCTGGCCGAGGNCGTNCATGGNGGTGGT

SEQ ID NO: 195

5 >093603H1
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TCCCGTAGCCACCCGACTAACATCTCANTNTCTGAAAATGCACAGAGATGCCTG
10 GCTACCTCGCCCTGCCTTCAGCCTCACGGGGCTCAGGTNCTTTTTTTNTTTGGTGC
CACCAGGNCGGAGCATGGAGGTACAGTACCTGCCACC

SEQ ID NO: 196

>gi|30081|emb|X57527.1|HSCOL8A1 Human COL8A1 mRNA for alpha 1(VIII) collagen
15 ATGGCTGTGCTGCCTGGCCCTCTGCAGCTGCTGGGAGTGCTGCTTACCATTTCCCT
GAGTTCATCAGGCTCATTAGGCTGGTGCCTACTATGGGATCAAGCCGCTGCCA
CCTCAAATTCCTCCTCAGATGCCACCACAAATTCACAATACCAGCCCCTGGGTC
AGCAAGTACCTCACATGCCCTTTGGCCAAAGATGGCCTCGCCATGGGCAAGGAGA
TGCCCCACTTGCAATATGGCAAAGAGTATCCACACCTACCCCAATATATGAAGGA
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20 AAATACCATTAGCCAGTTTACGAGGGGAACAAGGTCCCCGTGGAGAGCCTGGCC
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GAATGCCAGGGAAGCCAGGAGCCATGGGCATGCCTGGGGCAAAAGGAGAAATT
GGACAGAAAGGGGAAATTGGGCCTATGGGGATCCCAGGACCACAAGGACCTCCA
25 GGGCCTCATGGACTTCCTGGCATTGGGAAGCCAGGTGGGCCAGGGTTACCAGGG
CAACCAGGACCAAAGGGTGATCGAGGACCCAAAGGACTACCAGGACCTCAAGG
CCTTCGGGGTCCTAAAGGAGACAAGGGCTTCGGGATGCCAGGTGCGCCAGGTGT
AAAGGGGCCTCCAGGGATGCACGGCCTCCCCGGCCCTGTTGGACTGCCAGGAGT
GGGCAAACCAGGAGTGACAGGCTTCCTGGGCCCCAGGGCCCCCTGGGAAAGCC
30 AGGGGCTCCAGGAGAACCCGGTCGACAAGGCCCTATTGGGGTACCGGGGGTTCA
AGGACCTCCTGGGATACCCGGAATTGGAAAGCCAGGCCAGGATGGGATCCCAGG
CCAGCCAGGATTTCCAGGTGGCAAAGGGGAGCAAGGACTGCCAGGGCTACCAGG
GCCCCCAGGCCTTCCAGGGATTGGGAAACCAGGCTTCCCAGGACCCAAAGGTGA
CCGGGGCATGGGAGGTGTTCTGGGGCTCTTGACCAAGAGGGGAGAAAGGACC
35 AATAGGTTCCCCAGGAATAGGGGGTTCTCCAGGAGAGCCAGGCCTGCCTGGAAT
CCCAGGTCCTATGGGCCCCCAGGTGCTATTGGTTTTCTGGACCCAAAGGAGAA
GGTGGGATTGTAGGGCCACAGGGGCCACCAGGTCCCAAGGGTGAGCCAGGGCTT
CAAGGCTTCCCAGGAAAGCCAGGTTTCTTGGTGAAGTAGGGCCTCCTGGCATGA
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40 CAGGACTCCCTGGTGTTCCAGGGCTTCTCGGACCTAAGGGAGAACCAGGAATCC
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CAGGGCCCCCTGGGTTCCTGGTATAGGGAAACCCGGAGTGGCAGGACTTCATG
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45 ACCCCCAGGCCCTCCAGGACCTCCAGGACCCCCAGCTGTGATGCCCCCTACACCA
CCACCCCAGGGAGAGTATCTGCCAGATATGGGGCTGGGAATTGATGGCGTGA
CCCCCCCATGCTACGGGGGCTAAGAAAGGCAAGAATGGAGGGCCAGCCTATGAG
ATGCCTGCATTTACCGCCGAGCTAACCGCACCCCTTTCCACCGGTGGGGGGCCAG
TGAAGTTTAACAAACTGCTGTATAACGGCAGACAGAACTACAACCCGCAGACAG

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AAGGGGGGGAACGTGTGGGTTGCTCTATTCAAGAACAACGAGCCCGTGATGTAC
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5 CAGGACTGTATGCCGGGACAGTATGTCCACTCCTCCTTTTCAGGATATTTATTGTAT
CCCATGTAA

SEQ ID NO: 197

>g1949404

10 ACCCACAGGGCCCCTACCCACAAGAGGGCTACCCACAGGGCCCCTACCCCCAAG
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TGGGATGACAAGAGCATCCGACAAGNCTTCATCCGCAAGTGTTCTAGTGCTTGA
15 CCT

SEQ ID NO: 198

>gi|1057867|gb|H79778.1|H79778 yu77h11.r1 Soares fetal liver spleen INFLS Homo
sapiens cDNA clone IMAGE:239877 5' similar to SP:S43160 S43160 YEAST RPD3

20 HOMOLOG - AFRICAN CLAWED FROG ;, mRNA sequence

NGTTATCAACCAGGTAGTGGACTTCTACCAACCCACGTGCATTGTGCTCCAGTGT
GGANTGGACTCTCTGGGCTGTGATCGATTGGGCTGCTTTAACCTCAGCATCCGAG
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GGGTGGTGGTGGTTATACTGTCCGAAATGTTGCCCGCTGCTGGACATATGAGACA
25 TCGCTGCTGGTAGAAGAGGCCATTAGTGAGGAGCTTCCCTATAGTGAATACTTCG
AGTACTTTGCCCCAGACTTCACACTTCATCCAGATGTCAGCACCCCTCATCGAGAA
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GAC

30

SEQ ID NO: 199

>gi|3928429|emb|X72781.1|HSTRPIV Homo sapiens mRNA for trypsinogen IV a-form

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35 AAGATTGTTGGGGGCTACACCTGTGAGGAGAATTCTCTCCCTACCAGGTGTCCC
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40 CTCCTCACCTGCCGTCATCAATGCCCGCGTGTCCACCATCTCTCTGCCACCGCCC
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GCTGAGTGTAAGCCTCCTACCCTGGAAAGATTACCAACAGCATGTTCTGTGTGG
GCTTCCTTGAGGGAGGCAAGGATTCTGCCAGCGTGAATCTGGTGGCCCTGTGGT
45 CTGCAACGGACAGCTCCAAGGAGTTGTCTCCTGGGGCCATGGCTGTGCCTGGAA
GAACAGGCCTGGAGTCTACACCAAGGTCTACAACTATGTGGACTGGATTAAGGA
CACCATCGCTGCCAACAGCTAAAGCCCCCGTCCCTCTGCAGTCTCTATACCAAT
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SEQ ID NO: 200

>5171695H1

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5 ACAGAATATCCAAGATGACTTTAACAATGCTATTTTAGTAAATACATCAAAGCGA
AATCCTCAGCAAGCTGGCATCAGGGAGATATTTACGTTCTCACCCCAAATTTCCA
CGAATGGACCTGAACATCAGCCAAATGGAGAAACACAT

SEQ ID NO: 201

10 >gi|182734|gb|K00650.1|HUMFOS Human fos proto-oncogene (c-fos), complete cds
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GGCGCATTCCTTCGGGAGCCGAGGCTTAAGTCCTCGGGGTCTGTACTCGATGCC
GTTTCTCCTATCTCTGAGCCTCAGAACTGTCTTCAGTTTCCGTACAAGGGTAAAA
15 AGGCGCTCTCTGCCCCATCCCCCGACCTCGGGAACAAGGGTCCGCATTGAACC
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20 TCATCTTGGGGGGCCACGAGACCTCTGAGACAGGAAGTGCAGAAATGCTCACGA
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25 GACTGAGCCGGCGGCCGCGGCGCAGCGAACGAGCAGTGACCGTGCTCCTACCCA
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CCCGCTGCAGCAGCGCGTCCCCGGCCGGGGATAGCCTCTCTTACTACCACTACC
CGCAGACTCCTTCTCCAGCATGGGCTCGCCTGTCAACGCGCAGGTAAGGCTGGCT
30 TCCCGTCCGCGCGGGGCGGGGGCTTGGGGTTCGCGGAGGAGGAGACACCGGGCG
GGACGCTCCAGTAGATGAGTAGGGGGCTCCCTTGTGCCTGGAGGGAGGCTGCCG
TGGCCGGAGCGGTGCCGGCTCGGGGGCTCGGGACTTGCTCTGAGCGCACGCACG
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35 AAGCACAAACTCGCTAACTAGAGCCTGGCTTCTTCGGGGAGGTGGCAGAAAGCG
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40 GGAAGAGACAGGCACTGCGCTGCGGAATGCCTGGGAGGAAAAGGGGGAGACCT
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15 GGCCTTCACCCTGCCTCTCCTCAATGACCCTGAGCCCAAGCCCTCAGTGGAACCT
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40 GAGCTGATTTTAGAATATTTTACAAATACATGCCTTCCATTGGAATGCTAAGATT
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20 CCAGCACTTTGGGAGGCTGAGACAGGAGGATCACTGGAGTCCAGGAGTTTGAGA
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GAACTGATATTGCACCACCACTGCACTCCAGCCTGGGTGACACAGCAAAACCT
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25 ATAATAACAACCAGAGGAAGAAAAGGAAGACGATTTCACAGATGAAGAAGGGC
AGCTGGACCTTCGGAC

SEQ ID NO: 202

>gi|1049052|gb|U26644.1|HSU26644 Human fatty acid synthase (fas) mRNA, complete cds

30 ATGGAGGAGGTGGTGATTGCCGGCATGTTTCGGGAAGCTGCCAGAGTCGGAGAAC
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GACCGTCGCTGGAAGGCTGGGCTCTACGGCCTGCCCCGGCGGTCCGGCAAGCTG
AAGGACCTGTCTAGGTTTGATGCCTCCTTCTTCGGAGTCCACCCCAAGGAGGCAC
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35 GGACGGAGGCATCAACCCAGATTCACTCCGAGGAACACACACTGGCGTCTGGGT
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5 CTGCTGGAGCAGGGCCTCCGGCACAGCCAGGGCCTGGCTTTCTGAGCATGCTGA
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20 TCGGGCCGAGACGCCAGCGGCAAGCGTGTGATGGGACTGGTGCCTGCCAAGGGC
CTGGCCACCTCTGTCTGCTGTACCGGACTTCCTCTGGGATGTGCCTTCCAAGTGT
GACGCTGGAGGAGGCGGCCTCGGTGCTGTCTACAGCACGGGCTACTACGC
GCTGGTGGTGCCTGGGGGGGTGCGCCCGGGGAGACGCTGCTCATCCACTCGGG
CTCGGGCGGCGTGGGCCAGGCCGCCATCGCCATCGCCCTCAGTCTGGGCTGCCGC
25 GTCTTACCACCGTGGGGTGGCTGAGAAGCGGGCGTACCTCCAGGCCAGGTTC
CCCAGCTCGACAGCACCGACTTCGCCAACTCCCGGGACACATCCTTCGAGCAGCA
TGTGCTGTGGCACACGGGCGGGAAGGGCGTTGACCTGGTCTTGAAGTCTTGGCG
GAAGAGAAGCTGCAGGCCAGCGTGAGGTGCTTCGGTACGCACGGTGCCTTCCTG
GAAATTGGCAAATTCGACCTTTCTCAGAACCACCCGCTCGGCATGGCTATCTTCC
30 TGAAGAACGTGACATTCCACGGGGTCTACTGGATGCGTTCTTCAACGAGAGCA
GTGCTGACTGGCGGGAGGTGTGGGCGCTTGTGAGGCGGCCATCCGGGATGGGG
TGGTACGGCCCCCTCAAGTGCACGGTGTTCATGGGGCCCAGGTGGAGGACGCCTT
CCGCTACATGGCCCAAGGGAAGCACATTGGCAAAGTCTGCTGTCAGGTGCTTGC
GGAGGAGCCGGCAGTGCTGAAGGGGGCCAAACCCAAGCTGATGTCGGCCATCTC
35 CAAGACCTTCTGCCCCGGCCACAAGAGCTACATCATCGCTGGTGGTCTGGGTGGC
TTCGGCCTGGAGTTGGCGCAGTGGCTGATACAGCGTGGGGTGCAGAAGCTCGTG
TTGACTTCTCGCTCCGGGATCCGGACAGGCTACCAGGCCAAGCAGGTCCGCCGGT
GGAGGCGCCAGGGGCTACAGGTGCAGGTGTCCACCAGCAACATCAGCTCACTGG
AGGGGGCCCCGGGGCCTCATTGCCGAGGCGGCGCAGCTTGGGCCCCTGGGGGGCG
40 TCTTCAACCTGGCCGTGGTCTTGAGAGATGGCTTGTGAGAAACCAGACCCCAGA
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GGTGACCCGAGAGGCGTGCCCTGAGCTGGACTACTTTGTGGTCTTCTCCTCTGTG
AGCTGCGGGCGTGGCAATGCGGGACAGAGCAACTACGGCTTTGCCAATTCGCC
ATGGAGCGTATCTGTGAGAAACGCCGGCACGAAGGCCTCCAGGCCTGGCCGTG
45 CAGTGGGGCGCCATCGGCACCGTGGGCATTTTGGTGGAGACGATGAGCACCAAC
GACACGATCGTCAGTGGCACGCTGCCACGCGCATTGGCGTCCTTGGCCTGGAGG
TGCTGGACCTCTTCTGAACCAGCCCCACATGGTCCTGAGCAGCTTTGTGCTGGC
TGAGAAGGCTGCGGCCTATAGGGACAGGGACAGCCAGCGGGACCTGGTGGAGG
CCGTGGCACACATCCTGGGCATCCGCGACTTGGCTGCTGTCAACCTGGGCGGCTC

ACTGGCGGACCTGGGCCTGGACTCGCTCATGAGCGCGCCGGTGCGCCAGACGCT
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CCGGAAGCTGCAGGAGCTGTCCTCAAAGGCGGATGAAGCCAGCGAGCTGGCATG
CCCCACGCCCAAGGAGGATGGTCTGGCCCAGCAGCAGACTCAGCTGAACCTGCG
5 CTCCCTGCTGGTGAACCGGAGGGGCCCCACCCTGATGCGGCTCAACTCCGTGCAG
AGCTCGGAGCGGCCCCCTGTTCTTGGTGCACCCAATCGAGGCTACCACCGTGTTC
ACAGCCTCGGTCCCGGTCTCAGCATCCCCACCTATGGCCTGCAGTGCACCCCGGC
TGCGCCCCTTGACAGCATCCACAGCCTGGCTGCCTACTACATCGACTGCATCAGG
CAGGTGCAGCCCCGAGGGCCCCCTACCGCGTGGCCGGCTACTCCTACGGGGCCTGC
10 GTGGCCTTTGAAATGTGCTCCAGCTGCAGGCCAGCAGAGCCAGCCCCACCC
ACAACAGCCTCTTCTGTTGACGGCTCGCCACCTACGTACTGGCCTACACCCA
GAGTACCGGGCAAAGCTGACCCAGGCTGTAAGGCTGAGGCTGAGACGGAGGC
CATATGCTTCTTCGTGCAGCAGTTCACGGACATGGAGCACAACAGGGTGCTGGA
GGCGCTGCTGCCGCTGAAGGGCCTAGAGGAGCGTGTGGCAGCCGCCGTGGACCT
15 GATCATCAAGAGCCACCAGGGCCTGGACCGCCAGGAGCTGAGCTTTGCGGCCCG
GTCCTTCTACTACAGGCTGCGTGCCGCTGACCAGTATACACCCAAGGCCAAGTAC
AGTGGCAACGTGATGCTACTGCGGGCCAAGACGGGTGGCCGCTACGGCGAGGAC
CTGGGCGCGGACTACAACCTCTCCAGGTATGCGACGGGAAAGTATCCGTCCAT
ATCATCGAGGGTGACCACCGCACGCTGCTGGAGGGCAGCGGCCTGGAGTCCATC
20 ATCAGCATCATCCACAGCTCCCTGGCTGAGCCACGTGTGAGTCGGGAGGGCTAG

SEQ ID NO: 203

>gi|748131|gb|T98394.1|T98394 ye59f12.s1: Soares fetal liver spleen 1NFLS Homo sapiens
cDNA: clone IMAGE:122063-3', mRNA sequence

25 ACTTTTATTGTCATCCAGCACCTGTGATAGTTTCATGTCTCTCTAAAGGAGACAG
GAAATTGGAGCATTGTGGGCCCTTTTAAAAGAAAAGAGGAGTAGGTAGGCACAC
CCAGGTGCTTCTAAAACAACCAAGCCCAAACCTGACATGCTCCTCCCCACAGTCA
CCTTCATTGTCCCCTTTAAAAGTCTGGAACAGTATGTAGCAAAACAAATAAATTA
CTTTTCATTTCAAAAGTAAGTCCAAAGGTTGAAGCTGCCTAGGCCAGGGGTTCTG
30 GGACAGGGTGCTTCCAAAGGAAGTGAGGCTTTCTTTTCAACTTCCTTAGGCTCT
AGCCAGTAGGACCAGGAAACCCCTGCTTTTCCACATCAGGGNTTCCAGGATGGG
NGTTTTAGGTTAGGACTTNGGGGGATCCCGTTNGCTT

SEQ ID NO: 204

35 >gi|476704|gb|L26336.1|HUMHSPA2A Homo sapiens heat shock protein (HSPA2) gene,
complete cds

CCTCCACCTCCCGGGTTCAAGCGATTCTCCTGCCTCAGCCTCCCGAGTAGCTGAG
ACTACAGGCACGCGCCACCACGCCAGCTAATTTTTGTATCTTTAGTAGAGACGG
GCTTTCACCATGTTGGCCAGGATGGTCTCGATGTCTTAACGTCGTGATCCGGCCG
40 CCTCGGCCTCCCAAGTGCTGGGATTACAGGCGTTAGCCACTGCGCCCCGGCCCCAG
CCAGGCAGTTTAAATCGAGCGCTCACAACCACTGAGACGCAGCGAAGCACCCAC
CATAATATCCAGGAGGCCGACCGCCGGTTCAGACTTTTTCTTTTCTTAATCCCC
GTCCAAGGGATCCGCCCTACCCCCCAGCCACCCCAATTCCCTATTCCT
CCCCTTGGACGGCGCCGGGAAAACAAGCTGCTCGAGCTTTATTTCTTCGGTGCA
45 ACCAACTCAGAATGAATTCCTCCGCCCTGCGTGCTCAGTGAGTCGGCACCCCTAG
CAGTGAAGTGCATTTAAAACCTCAGGAATTGAGCGAACTCTCCAGTGGCTCTCC
TCACCGGGATCCCCTTCCACGCCTCCTCCCCGTGCCGCGCCTCAGTCCGCACTGCT
CATTGGCCGCGTGCTGCCAATCCGATGCACGTCGGCTAGGGCAAAGACCGCGA
AAAAGCGCGTACACCTGGCTCTGGGAGCGCGCGCCTAACGCCAGCCAGCAGCAG

GAGGCGCGGAGGCACCGGCCTGGCGGCCGAGAGTCAGGGAGGAACCTCATT
TACATAACGGCCGCCCTCTGTCTCCTGGCGGGGGCCGGAGTCCCGCCCCTCGTC
CAACTTGAAATCTGTTGGGTACGGGCCAGTCACTCCGACCTAGGCAAGCCTGTG
GTGGAGCTGGAAGAGTTTGTGAGGGCGGTCCCGGGAGCGGATTGGGTCTGGGAG
5 TTCCCAGAGGCGGCTATAAGAACCGGGAACCTGGGCGCGGGGAGCTGAGTTGCTG
GTAGTGCCCGTGGTGCTTGGTTCGAGGTGGCCGTTAGTTGACTCCGCGGAGTTCA
TCTCCCTGGTTTTCCCGTCCTAACGTCGCTCGCCTTTCAGTCAGGATGTCTGCCCG
TGGCCCGGCTATCGGCATCGACCTGGGCACCACTATTCGTGCGTCGGGGTCTTC
CAACATGGCAAGGTGGAGATCATCGCCAACGACCAGGGCAATCGCACCAACCCCC
10 AGCTACGTGGCCTTCACGGACACCGAGCGCCTCATCGGCGACGCCGCCAAGAAC
CAGGTGGCCATGAACCCCAACACCATCTTCGACGCCAAGAGGCTGATTGGA
CGGAAATTCGAGGATGCCACAGTGCAGTCGGATATGAAACACTGGCCGTTCCGG
GTGGTGAGCGAGGGAGGCAAGCCCAAAGTGCAAGTAGAGTACAAGGGGGAGAC
CAAGACCTTCTTCCCAGAGGAGATATCCTCCATGGTCCTCACGAAGATGAAGGA
15 GATCGCGGAAGCCTACCTGGGGGGCAAGGTGCACAGCGCGGTCTATAACGGTCCC
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GGGGCTCAATGTGCTGCGCATCATCAACGAGCCACGGCGGGCGGCCATCGCCTA
CGGCCTGGACAAGAAGGGCTGCGCGGGCGGCGAGAAGAACGTGCTCATCTTTGA
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20 GAGGTGAAGTCCACGGCCGGCGATAACCACTGGGCGGTGAGGACTTCGACAAC
CGCATGGTGAGCCACCTGGCGGAGGAGTTCAAGCGCAAGCACAAGAAGGACATT
GGGCCCAACAAGCGCGCCGTGAGGCGGCTGCGCACCGCTTGCGAGCGCGCCAAG
GGCACCTGAGCTCGTCCACGCAGGCGAGCATCGAGATCGACTCGCTCTACGAG
GGCGTGGACTTCTATACGTCCATCACGCGCGCCCGCTTCGAGGAGCTCAATGCCG
25 ACCTCTTTCGCGGGACCCTGGAGCCGGTGGAGAAGGCGCTGCGCGACGCCAAGC
TGGACAAGGGCCAGATCCAGGAGATCGTGCTGGTGGGCGGCTCCACTCGTATCC
CCAAGATCCAGAAGCTGCTGCAGGATTTCTTCAACGGCAAGGAGCTGAACAAGA
GCATCAACCCCGACGAGGCGGTGGCCTATGGCGCCGCGGTGCAGGCGGCCATCC
TCATCGGCGACAAATCAGAGAATGTGCAGGACCTGCTGCTACTCGACGTGACCC
30 CGTTGTGCTGCGTCGGCATCGAGACAGCTGGCGGTGTCATGACCCCACTCATCAAGAG
GAACACCACGATCCCCACCAAGCAGACGCAGACCTTCACCACCTACTCGGACAA
CCAGAGCAGCGTACTGGTGCAGGTATACGAGGGCGAACGGGCCATGACCAAGGA
CAATAACCTGCTGGGCAAGTTCGACCTGACCGGGATTCCCCCTGCGCCTCGCGGG
GTCCCCCAAATCGAGGTTACCTTCGACATTGACGCCAATGGCATCCTTAACGTTA
35 CCGCCGCCGACAAGAGCACCGGTAAGGAAAACAAAATCACCATCACCATGACA
AAGGTCGTCTGAGCAAGGACGACATTGACCGGATGGTGCAGGAGGCGGAGCGGT
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40 ACTGGCTCGACCGAAACCAGATGGCAGAGAAAGATGAGTATGAACACAAGCAG
AAAGAGCTCGAAAGAGTTTGCAACCCCATCATCAGCAAACCTTTACCAAGGTGGT
CCTGGCGGGCGGACGGCGGGCGGCGGTCAGGAGCCTCCGGGGGACCCACCATC
GAAGAAGTGGACTAAGCTTGCACTCAAGTCAGCGTAAACCTCTTTGCTTTCTCT
CTCTCTCTTTTTTTTTTTGTTTTGTTTCTTTGAAATGTCCTTGTGCCAAGTACGAGATC
45 TATTGTTGGAAGTCTTTGGTATATGCAAATGAAAGGAGAGGTGCAACAACCTTAGT
TTAATTATAAAAGTTCCAAAGTTTGTTTTTTAAAAACATTATTCGAGGTTTCTCTT
TAATGCATTTTTCGCTGTTTGTGCTGACTTGAGCATTTTTGATTAGTTTCGTGCATGGAG
ATTTGTTTGAGATGAGAAACCTTAAGTTTGCACACCTGTTCTGTAGAAGCTTGGA
AACAGTAAAATATATAGGAGCTTAAATTGTTTATTTTTATGTACTACTTTAAAACCT

AAACTGAACATTGCAGTAATGTTAAGGACAGGTATACTTTTTGCAAACAAATGCA
TAAATGCAAATGTAAAGTAAA

SEQ ID NO: 205

5 >gi|483537|emb|Z29330.1|HSUCEH2 H.sapiens (23k/2) mRNA for ubiquitin-conjugating
enzyme UbcH2
CCGGGCCGTGACAGACGGCCGGCAGAGGAAGGGAGAGAGGCGGCGGCGACACC
ATGTCATCTCCCAGTCCGGGCAAGAGGCGGATGGACACGGACGTGGTCAAGCTC
ATCGAGAGTAAACATGAGGTTACGATCCTGGGAGGACTTAATGAATTTGTAGTG
10 AAGTTTTATGGACCACAAGGAACACCATATGAAGGCGGAGTATGGAAAGTTAGA
GTGGACCTACCTGATAAATACCTTTCAAATCTCCATCTATAGGATTCATGAATA
AAATTTTCCATCCCAACATTGATGAAGCGTCAGGAACTGTGTGTCTAGATGTAAT
TAATCAAACCTGGACAGCTCTCTATGATCTTACCAATATATTTGAGTCCTTCCTGC
CTCAGTTATTGGCCTATCCTAACCCCATAGATCCTCTCAATGGTGACGCTGCAGC
15 CATGTACCTCCACCGACCAGAAGAATACAAGCAGAAAATTAAAGAGTACATCCA
GAAATACGCCACGGAGGAGGCGCTGAAAGAACAGGAAGAGGGTACCGGGGACA
GCTCATCGGAGAGCTCTATGTCTGACTTTTCCGAAGATGAGGCCCAGGATATGGA
GTTGTAGTAGAAAAAGCACCTGCTTTTCAGAAAGACTATTATTTCCTAACCATGA
GAAGCAGACTATAATATTCATATTTAAACAAAGCAATTTTTTTTATTACTAAACA
20 AGGTTTTTATGAATAATAGCATTGATATATATATATATATACACCCTTTAGATC
TTGATTTCTTGGTCATTTCTCAACCTGAGGTGCATAGCATATTCCCACATTCCATT
TGGTAGCAATATGCGGTCTGAATGCATGCATTCATGAGTCCATGTGGCCAAGTCA
GCCTGTGTGCTACTGAACTGTGCAAGGAAATAGCCGCTCTGATAGGTAGATGTGA
GTAAAAAGAACAGGAAAAAATTGCTTCTTTTATTGGTTTCCAAAGAAACAAACC
25 AAACCAACCAGCTCTTGATGTGAAGATAAAATAGTGCTTTTTTGAATGGAGA
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AAGAATCAGAGCTGCTCCTTCCTGTGAATCCTAGGTGGCCCTATGTCTTCTGTGG
AGTTACAGTATAAAGCAGGGAGCTAATTAAGAGTATTA AAACTTAAACCATTTT
TTGACTCTGATTTTAAGTACATTTTATATGTCAGTTGCTGCCCTTCACACTACCA
30 GGCCCTGCAGCCACAGTGTTCTGTTGGAGAACTTGGGGAAGTGTTTTCTGAACC
AGTTCTTTTTCTTGGGGTAGAGCGTGAAATCCAGACCTGTTTTTGAAAGGACAGC
ACAGGAGGAGAAAAGTGACTGGGACGATGCTTCCTCTCATCCAAAACACATGCA
GAGTCACATCCTCATCCTAGTGTTTGGGAGTTTGAGACCGCTACCCTGAACTTAA
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35 GTGTGTATTGTGCTTAGAAAGGTTGCAGATTTCATCTTCACCTACC

SEQ ID NO: 206

>4694921H1

GAGCCTAAGTGGGAGCCAGACCACGCAGGAGCTGGAGAACGTGGGGCGCATTGT
40 CCAGGTGTTGAGGCTGCTCAGGGCTCTGCGCATGCTAAAGCTGGGCAGACATTCC
ACAGGATTACGCTCCGTTGGGATGACAATCACCCAGTGTTAC

SEQ ID NO: 207

45 >gi|1162368|gb|N39161.1|N39161 yv26a01.s1 Soares fetal liver spleen 1NFLS Homo
sapiens cDNA clone IMAGE:243816 3' similar to gb:M98399 PLATELET
GLYCOPROTEIN IV (HUMAN);, mRNA sequence
TTAAGGAAGAACATATTTTAATGGTTGAAACCTGTCTTTATGAGGCGATTATGAC
AGCAAAAAATATTATAATGAATAACAATGCATAGTCTACGCTTTGTAATATTTCA
TACAATAATTCCTTTATCATTTACATCTCTTAATGCTAGAAAAGCATTCTGAAGAT

GCCAAGCGTAAGTTGCAACTGAGTAAAAAAAAAAAAAGCAAAATTTACTCAATTT
CCAGAAGAGGTGCAGAACAGAGAATGAAGGTCCTTAAAATATAAACCGCTAGTG
TGCTAAAATGATGTCCATTTGCAGGATCAGTGGACAAAATATTTAAGCCCATAAA
GAAAAGAGTTATACCTGCTGTATGAAGGTATTCCATAGAGAAATATGAGTCATA
5 AGCCAATTATTTATAAATGGCCTTCCAAATATTTGGT

SEQ ID NO: 208

>gi|1469913|gb|U41070.1|HSU41070 Human P2 purinergic receptor mRNA, complete cds

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10 TTCTCACGCGGCTCTTCGAAGGCTCTGGGGAGGCCCCAGGGGGCGGCCGCTCTA
GGGAAGGGACCATGGAGCTCCGAACCTACCCCTCAGCTGAAAGTGGTGGGGCAGG
GCCGCGGCAATGGAGACCCGGGGGGTGGGATGGAGAAGGACGGTCCGGAATGG
GACCTTTGACAGCAGACCCTACAACCTGCTGCCCTTCCCTGTCCCTTTCCACCCCC
CACCCACCCTCCAGAGGTCCTCCCGACGGCCATGAACACTACATCTTCTGCAGCA
15 CCCCCCTCACTAGGTGTAGAGTTCATCTCTCTGCTGGCTATCATCCTGCTGTCAGT
GGCGCTGGCTGTGGGGCTTCCCGGCAACAGCTTTGTGGTGTGGAGTATCCTGAAA
AGGATGCAGAAGCGCTCTGTCACCTGCCCTGATGGTGTCTGAACCTGGCCCTGGCCG
ACCTGGCCGTATTGCTCACTGCTCCCTTTTTCCTTCACTTCCTGGCCCAAGGCACC
TGGAGTTTGGACTGGCTGGTTGCCGCTGTGTCACTATGTCTGCGGAGTCAGCA
20 TGTACGCCAGCGTCCTGCTTATCACGGCCATGAGTCTAGACCGCTCACTGGCGGT
GGCCCGCCCCCTTTGTGTCCCAGAAGCTACGCACCAAGGCGATGGCCCGGCGGGT
GCTGGCAGGCATCTGGGTGTTGTCCTTTCTGCTGGCCACACCCGTCTCGCGTAC
CGCACAGTAGTGCCCTGGAAAACGAACATGAGCCTGTGCTTCCCGCGGTACCCC
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25 TGCCCTTCTGGCTGTGGTGGCCAGCTACTCGGACATAGGGCGTCGGCTACAGGC
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TGGCCCGCAACGTGCTCATCGTACTCGCCTTCTGAGCAGCAGCGTGAACCCCGT
30 GCTGTACGCGTGCGCCGGCGGGCCTCGTGCGCTCGGCGGGCGTGGGCTTCGTC
GCCAAGCTGCTGGAGGGCACGGGCTCCGAGGCGTCCAGCACGCGCCGCGGGGGC
AGCCTGGGCCAGACCGCTAGGAGCGGCCCGCCGCTCTGGAGCCCGGCCCTTCC
GAGAGCCTCACTGCCTCCAGCCCTCTCAAGTTAAACGAACTGAACCTAGGCCTGGT
GGAAGGAGGCGCACTTTCCTCCTGGCAGAATGCTAGCTCTGAGCCAGTTCAGTAC
35 CTGGAGGAGGAGCAGGGGCGTGGAGGGCGTGGAGGGCGTGGGAGCGTGGGAGG
CGGGAGTGGAGTGGAAGAAGAGGGAGAGATGGAGCAAAGTGAGGGCCGAGTGA
GAGCGTGCTCCAGCCTGGCTCCCACAGGCAGCTTTAACCATTAAACTGAAGTCT
GAAATTTGGTCAAAAAAAAAAAAAA

40 SEQ ID NO: 209

>gi|2196448|dbj|D89078.1|D89078 Homo sapiens mRNA for leukotriene b4 receptor,
complete cds

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TTCTTGCTGCGGTTTCTGCCCATTCTTTTTCATATCCTCTGACAGCTGCGAGGTCAT
45 CTCTGCTCTGGCTTTTCTCCAAGCAGAACAAGTGGGGGCTCTGGAAAGGTAAAG
GACCTCAGTGGCCACCATTATACTTTGCATCTTTCCTGAGAAGTGAGAGTTGAAA
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TCCCAAGTAGCTGAGACTACAGGCACATGCCACTACACCCAGCTAACTTTTGTAT
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ATCAAGTGATCTGCTCCCCTCAGCCTCCCAAAGTGCTGGGATTACCGGTATGAAC
CACCACAACCTGCCAGGAATTTTTAGTTTTAGCTTTTGCAGGAGACTTCAAGGA
5 AAGGAGACATTCTCTGTCCAGGAAACGGGTAAGGGGACCATTCTGCAATTGCTG
GTTTCCCCTCTTGGCAGGGTGGGCATGAGGCATCACTGTTCTGCTCCCTCACTCC
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10 AGATCATAAATCCAGACTCAGCAGGGTAACCACATGGGCAAGCACAAGGTAGGT
GCTTGGGGAAAGGGGAAGTAATTGGCATTCTGTGTGATACCAAGGAGACCATT
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15 AGGACCTAGTCACAGCTCCAACCTACACTTCCTATTAATCTTAAACAAAGCGAA
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20 GAGTCCTCCTGCCTTCTGGGTTGCCCTGGAAAACAGACTATCCCCCTCCTAGTG
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TGACCCTGGGATTGGCATCAGCTTCCAACCAGTTCCTGCCAAAGCTTGTAAGTCC
25 TCCCGACGGCCATGAACACTACATCTTCTGCAGCACCCCCCTCACTAGGTGTAGA
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CCGGCAACAGCTTTGTGGTGTGGAGTATCCTGAAAAGGATGCAGAAGCGCTCTG
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TGCTCCCTTTTTCCTTCACTTCCTGGCCCAAGGCACCTGGAGTTTTGGACTGGCTG
30 GTTGCCGCCTGTGTCACTATGTCTGCGGAGTCAGCATGTACGCCAGCGTCCTGCT
TATCACGGCCATGAGTCTAGACCGCTCACTGGCGGTGGCCCGCCCCTTTGTGTCC
CAGAAGCTACGCACCAAGGCGATGGCCCGGCGGGTGCTGGCAGGCATCTGGGTG
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35 TCCATCTAATCTTCGAGGCTGTACGGGCTTCCTGCTGCCCTTCCTGGCTGTGGTG
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CCGCCGGGTAGGGCTCGTGGGGAAGCGGCTGAGCCTGGCCCGCAACGTGCTCA
40 TCGCACTCGCCTTCCTGAGCAGCAGCGTGAACCCCGTGCTGTACGCGTGCGCCGG
CGGCGGCCTGCTGCGCTCGGCGGGCGTGGGCTTCGTCGCCAAGCTGCTGGAGGG
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AGCCCTCTCAAGTTAAACGAACCTGAAGTGGTGGAAAGGAGGCGCACTTT
45 CCTCCTGGCAGAATGCTAGCTCTGAGCCAGTTCAGTACCTGGAGGAGGAGCAGG
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GGCTCCCACAGGCAGCTTTAACCATTAAACTGAAGTCTGAA

SEQ ID NO: 210

>gi|521217|gb|M27602.1|HUMTRPSGNB Human pancreatic trypsinogen (TRY2) mRNA,
complete cds

5 AACACCATGAATCTACTCCTGATCCTTACCTTTGTTGCAGCTGCTGTTGCTGCCCC
CTTTGATGATGATGACAAGATCGTTGGGGGCTACATCTGTGAGGAGAATTCTGTC
CCCTACCAGGTGTCCTTGAATTCTGGCTACCACTTCTGCGGTGGCTCCCTCATCAG
CGAACAGTGGGTGGTGTGTCAGCAGGTCACTGCTACAAGTCCCGCATCCAGGTGAG
ACTGGGAGAGCACAACATCGAAGTCCTGGAGGGGAATGAACAGTTTCATCAATGC
GGCCAAGATCATCCGCCACCCCAAATACAACAGCCGGACTCTGGACAATGACAT
10 CCTGCTGATCAAGCTCTCCTCACCTGCCGTCATCAATTCCCGCGTGTCCGCCATCT
CTCTGCCCCTGCCCCCTCCAGCTGCTGGCACCGAGTCCCTCATCTCCGGCTGGGG
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ACATGTTCTGTGTGGGCTTCCTCGAGGGAGGCAAGGATTCTGCCAGGGTGATTCT
15 TGGTGGCCCTGTGGTCTCCAATGGAGAGCTCCAAGGAATTGTCTCCTGGGGGCTAT
GGCTGTGCCCAGAAGAACAGGCCTGGAGTCTACACCAAGGTCTACAACATATGTG
GACTGGATTAAGGACACCATAGCTGCCAACAGCTAAAGCCCCAGTCCCTCTGC
AGTCTCTATACCAATAAAGTGACCCTGCTCTCAC

20 SEQ ID NO: 211

>gi|186262|gb|M24594.1|HUMII56KD Human interferon-inducible 56 Kd protein mRNA,
complete cds

25 CCAGATCTCAGAGGAGCCTGGCTAAGCAAAACCCTGCAGAACGGCTGCCTAATT
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GTGGGAATACACAACCTACTAGCCTATGTGAAACACCTGAAAGGCCAGAATGAG
GAAGCCCTGAAGAGCTTAAAAGAAGCTGAAAACCTTAATGCAGGAAGAACATGAC
AACCAAGCAAATGTGAGGAGTCTGGTGACCTGGGGCAACTTTGCCTGGATGTATT
30 ACCACATGGGCAGACTGGCAGAAGCCCAGACTTACCTGGACAAGGTGGAGAACA
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CAAGGCCTGCTTTGAAAAGGTGCTTGAAGTGGACCCTGAAAACCCTGAATCCAG
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35 AATCACAAGCCATTTTCTTTGCTTCCCCTAAGGCAGGCTGTCCGCTTAAATCCAG
ACAATGGATATATTAAGGTTCTCCTTGCCCTGAAGCTTCAGGATGAAGGACAGGA
AGCTGAAGGAGAAAAGTACATTGAAGAAGCTCTAGCCAACATGTCCTCACAGAC
CTATGTCTTTCGATATGCAGCCAAGTTTTACCGAAGAAAAGGCTCTGTGGATAAA
GCTCTTGAGTTATTAAGGCTTGCAGGAAACACCCACTTCTGTCTTACTGC
40 ATCACCAGATAGGGCTTTGCTACAAGGCACAAATGATCCAAATCAAGGAGGCTA
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45 AAGACATACATTTCTACTATGGTCGGTTTCAGGAATTTCAAAAAGAAATCTGACGT
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AGGGATAAAAAGTATCAATTCTTTGAAGAAATTGGTTTTAAGGAAACTTCGGAGA
AAGGCATTAGATCTGGAAAGCTTGAGCCTCCTTGGGTTTCGTCTATAAATTGGAAG
GAAATATGAATGAAGCCCTGGAGTACTATGAGCGGGCCCTGAGACTGGCTGCTG

ACTTTGAGAACTCTGTGAGACAAGGTCCTTAGGCACCCAGATATCAGCCACTTTC
ACATTTTCATTTTCATTTTATGCTAACATTTACTAATCATCTTTTCTGCTTACTGTTTT
CAGAAACATTATAATTCAGTGTAAATGATGTAATTCTTGAATAATAAATCTGACAA
AATATT

5

SEQ ID NO: 212

>1442951T6

AAGAGACATGAGACAACCACTGAGAACCAGCCACCCGGAGCTCAGTTTCTGCTA
CAGAGCACCTCCTCTTCAACGAATCACTGGATACCATTGGAGAGCAAGTCACTGT
10 TGTGTAAGCAGCAGAGCTGGAGGTGCTGTCAAGAGTCTCAGCAGACTCATTGGC
CAGATGCACCGAACTCAATGAGGCACCTTAGAGATGAGAAACGATCTGTACTGGG
ATTTCCCAGCAGAAGAGACTTTGGTTTTTGTTCATCCTGAAGTTGCCACTCCACCA
CCAGTTTTATAGAGGGATATTCGCTTTTCACTGGTAGTTTATTTCAGGTAGCTATAG
GTCTTGTCTTTTTGGATAGGGCAGTTAATTCCACTCTTACAACCATCAGGCTCAGG
15 AATGGGAAAGGGAACTGGGACGCCCATCAGGATGCCATGCACCACGGCCTTGCT
GCTTTTAGACTGAATATTGCTGGTGAAGGTGACATTGACGCTGTAAGACTGTCCT
TTGCTCAGCTGGCAGGGTTTGGTGGGGCATGGGGCTCACATTCAGTTCCTTTATA
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20 SEQ ID NO: 213

>gi|2216521|gb|AA486305.1|AA486305 ab35c01.r1 Stratagene HeLa cell s3 937216 Homo sapiens cDNA clone IMAGE:842784 5' similar to gb:X60036 MITOCHONDRIAL

PHOSPHATE CARRIER PROTEIN PRECURSOR (HUMAN);, mRNA sequence

GTCTTAAGTTGTGGTCTGAGACACACTGCTGTGGTTCCCCTGGATTAGTGAAAT
25 GCCGTATGCAGGTGGACCCCCAAAAGTACAAGGGCATATTAAACGGATTCTCAG
TTACACTTAAAGAGGATGGTGTTCGTGGTTTGGCTAAAGGATGGGCTCCGACTTT
CCTTGGCTACTCCATGCAGGGACTCTGCAAGTTTGGCTTTTATGAAGTCTTTAAA
GTCTTGTATAGCAATATGCTTGGAGAGGAGAATACTTATCTCTGGCGCACATCAC
TATATTTGGCTGCCTCTGCCAGTGCTGAATTCCTTGCTGACATTGCCCTGGCTCCT
30 ATGGAAGCTGCTAAGGTTTCAATTCAAACCCAGCCAGGTTATGCCAACACTTTGA
GGGATGCAGCTCCCAAATGTATAAGGAAGAAGGCCTAAAAGCATTCTACAAGG
GGGTTGCTCCTCTCTGGATGAGACAGATAACATACACCATGATGAAGTTCGCCTG
CTTTG

35 SEQ ID NO: 214

>gi|186620|gb|M59373.1|HUMJTK2 Human tyrosine kinase (JTK2) mRNA, partial cds

ACCGGGACCTGGCTGCCCCGAATGTGCTGGTGAAGTGAAGACAATGTGATGAAGA
TTGCTGACTTTGGGCTGGCCCGCGGCCTCCACCACATTGACTACTATAAGAAAAC
CAGCAACGGCCGCTGCCTGTGAAGTGGATGGCGCCCGAGGCCTTGTGTTGACCG
40 GGTGTACACACACCAGAGTGACGTGTGGTCCTT

SEQ ID NO: 215

>gi|1527336|gb|AA047666.1|AA047666 zf14b02.s1 Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone IMAGE:376875 3' similar to gb:M64082 DIMETHYLANILINE

45 MONOOXYGENASE (HUMAN);, mRNA sequence

ATAAGTAAAAGATCTCCTAAATGGAAGATGCACAGAGTAGATTTACAATGCTCC
AATTCCTCTCTTACAGCAATATTGCCTTCACAGTTATAAACTGTATTCAAATAGTA
AAGGTCACCCTCTCGCTTCCCTGGCTGGCCCCAGGGCTACCACTGGTATTCTCTGA
GCCTCTCCCAGCTCCACTTCTAATGCTAGAGAATGATAACTAAGATTTCTGTGCA

TTTGAAGGTTGTTGGAAAGTTACAGGTTCAATTTTAGAAAGAAANGCTGTTCTTGA
CAGCACTCCTGAGCCATCATACCTCTTTCCCATATAAACTATTTTCACAGATCTCA
ACTAAAACCCCTTNACTTTACAAAATGGATTGTGGTTGGTGCTGGAAATGGTGC

5 SEQ ID NO: 216

>gi|2218571|gb|AA488969.1|AA488969 aa55h08.r1 NCI_CGAP_GCB1 Homo sapiens
cDNA clone IMAGE:824895 5', mRNA sequence

GACTACAACGTGGCCCTTCAGAGATCGCGGATGGTCGCACGATCCTCCGACACA
GCTGGGCCTTCATCCGTACAGCAGCCACATGGGCATCCCACCAGCAGCAGGCCT
10 GTGAACAAACCTCAGTGGCATAAACCGAACGAGTCTGACCCGCGCCTCGCCCCCTT
ATCAGTCCCAAGGGTTTTCCACCGAGGAGGATGAAGATGAACAAGTTTCTGCTGT
TTGAGGCACAGACTTTTCTGGAAGCAGAGCGNGCCACCTGAAAGGAGAGCACAA
GAAGACGTCTTGAGCATTGGAGCCTTGGAACCTCACATTCTGAGGACGGTGGACC
AGTTTGCCTCCTTCCCTGCCTTAAAAGCAGCATGGGGCTTCTTCTCCCCCTTCTTCC
15 TTTCCCCTTTGCATGTGAAATACTGTGAAGAAATTGCCCTGGCACTTTTCAGACTT
TGTTGCTTGAAATGCACAGTGCAGCAATCTTCGAGCT

SEQ ID NO: 217

>gi|588224|gb|I09069.1| Sequence 5 from Patent WO 8809376

20 GTCCCGAGCGCGAGCGGAGACGATGCAGCGGAGACTGGTTCAGCAGTGGAGCGT
CGCGGTGTTCTGTGCTGAGCTACGCGGTGCCCTCCTGCGGGCGCTCGGTGGAGGGT
CTCAGCCGCGCCTCAAAGAGCTGTGTCTGAACATCAGCTCCTCCATGACAAGG
GGAAGTCCATCAAGATTTACGGCGACGATTTCTCCTTCACCATCTGATCGCAGA
AATCCACACAGCTGAAATCAGAGCTACCTCGGAGGTGTCCCCTAACTCCAAGCCC
25 TCTCCCAACACAAAGAACCACCCCGTCCGATTTGGGTCTGATGATGAGGGCAGAT
ACCTAACTCAGGAACTAACAAGGTGGAGACGTACAAAGAGCAGCCGCTCAAGA
CACCTGGGAAGAAAAAGAAAGGCAAGCCCGGGAACGCAAGGAGCAGGAAAAG
AAAAAACGGCGAACTCGCTCTGCCTGGTTAGACTCTGGAGTGAAGGGAGTGGG
CTAGAAGGGGACCACCTGTCTGACACCTCCACAACGTCGCTGGAGCTCGATTAC
30 GGAGGCATTGAAATTTTCAGCAGAGACCTTCCAAGGACATATTGCAGGATTCTGT
AATAGTGAACATATGGAAAGTATTAGAAATATTTATTGTCTGTAAATACTGTAAA
TGCATTGGAATAAACTGTCTCCCCCATTGCTCTATGAAACTGCACATTGGTCAT
TGTGAATATTTTTTTTTTTTGCCAAGGCTAATCCAATTATTATTATCACATTTACCA
TAATTTATTTTGTCCATTGATGTATTTATTTTGTAAATGTATCTTGGTGCTGCTGA
35 ATTTCTATATTTTTTGTAAACATAATGCACTTTAGATATACATATCAAGTATGTTGA
TAAATGACACAATGAAGTGTCTCTATTTTGTGGTTGATTTTAATGAATGCCTAAA
TATAATTATCCAAATTGATTTTCTTCGTGCATGTAAAAATAACAGTATTTTAAAT
TTGTAAAGAATGTCTAATAAAATATAATCTAATTAC

40 SEQ ID NO: 218

>gi|182891|gb|M63904.1|HUMGA16 Human G-alpha 16 protein mRNA, complete cds

TGTTCCCAGCACTCAAGCCTTGCCACCGCCGAGCCGGGCTTCCTGGGTGTTTCAG
GCAAGGAAGTCTAGGTCCCTGGGGGGTGACCCCAAGGAAAAGGCAGCCTCCCT
GCGCACCCGGTTGCCCGGAGCCCTCTCCAGGGCCGGCTGGGCTGGGGGTTGCCCT
45 GGCCAGCAGGGGCCCCGGGGGCGATGCCACCCGGTGCCGACTGAGGCCACCGCAC
CATGGCCCCTCGCTGACCTGGCGCTGCTGCCCTGGTGCTGACGGAGGATGAG
AAGGCCGCCGCCGGGTGGACCAGGAGATCAACAGGATCCTCTTGGAGCAGAAG
AAGCAGGACCGCGGGGAGCTGAAGCTGCTGCTTTTGGGGCCAGGCGAGAGCGGG
AAGAGCACCTTCATCAAGCAGATGCGGATCATCCACGGCGCCGGCTACTCGGAG

GAGGAGCGCAAGGGCTTCCGGCCCCCTGGTCTACCAGAACATCTTCGTGTCCATGC
 GGGCCATGATCGAGGCCATGGAGCGGCTGCAGATTCCATTTCAGCAGGCCCGAGA
 GCAAGCACCACGCTAGCCTGGTCATGAGCCAGGACCCCTATAAAGTGACCACGT
 TTGAGAAGCGCTACGCTGCGGCCATGCAGTGGCTGTGGAGGGATGCCGGCATCC
 5 GGGCCTGCTATGAGCGTCGGCGGGAATTCACCTGCTCGATTTCAGCCGTGTACTA
 CCTGTCCCACCTGGAGCGCATCACCGAGGAGGGCTACGTCCCCACAGCTCAGGA
 CGTGCTCCGCAGCCGCATGCCACCACTGGCATCAACGAGTACTGCTTCTCCGTG
 CAGAAAACCAACCTGCGGATCGTGGACGTCGGGGGCCAGAAAGTCAGAGCGTAAG
 AAATGGATCCATTGTTTCGAGAACGTGATCGCCCTCATCTACCTGGCCTCACTGA
 10 GTGAATACGACCAGTGCCTGGAGGAGAACAACCAGGAGAACCGCATGAAGGAG
 AGCCTCGCATTGTTTGGGACTATCCTGGAACCTACCCTGGTTCAAAAGCACATCCG
 TCATCCTCTTTCTCAACAAAACCGACATCCTGGAGGAGAAAATCCCCACCTCCCA
 CCTGGCTACCTATTTCCCCAGTTTCCAGGGCCCTAAGCAGGATGCTGAGGCAGCC
 AAGAGGTTTCATCCTGGACATGTACACGAGGATGTACACCGGGTGCGTGGACGGC
 15 CCCGAGGGCAGCAAGAAGGGCGCACGATCCCGACGCCTTTTCAGCCACTACACA
 TGTGCCACAGACACACAGAACATCCGCAAGGTCTTCAAGGACGTGCGGGACTCG
 GTGCTCGCCCGCTACCTGGACGAGATCAACCTGCTGTGACCCAGGCCCCACCTGG
 GGCAGGCGGCACCGGCGGGCGGGTGGGAGGTGGGAGTGGCTGCAGGGACCCTA
 GTGTCCTGGTCTATCTCTCCAGCCTCGGCCACACGCAAGGGAGTCGGGGGACGG
 20 CCCGCTGCTGGCCGCTCTCTTCTCTGCCTCTCACCAGGACAGCCGCCCCCAGGG
 TACTCCTGCCCTTGCTTGACTCAGTTTCCCTCCTTTGAAAGGGAAGGAGCAAAAC
 GGCCATTTGGGATGCCAGGGTGGATGAAAAGGTGAAGAAATCAGGGGATTGAGA
 GTTGGGTGGGTGGGCATCTCTCAGGAGCCCCATCTCCGGGCGTGTCAECTCCTGG
 GCAGGGTTCTGGGACCCTCTGTGGGTGACGCACACCCTGGGATGGGGCTAGTAG
 25 AGCCTTCAGGCGCCTTCGGGCGTGGACTCTGGCGCACTCTAGTGGACAGGAGAA
 GGAACGCCTTCCAGGAACCTGTGGACTAGGGGTGCAGGGACTTCCCTTTGCAAG
 GGGTAACAGACCGCTGGAACAACTGTCACTTTTCAGAGCTCGGTGGCTCACAGC
 GTGTCCTGCCCCGGTTTGCGGACGAGAGAAATCGCGGCCACAAAGCATCCCCAT
 CCCTTGACAGGCTGGGGGCTGGGCATGCTGCATCTTAACCTTTTGTATTTATTCCT
 30 CACCTTCTGCAGGGCTCCGTGCGGGCTGAAATTAAAGATTCTTAG

SEQ ID NO: 219

>gi|1056573|gb|H78484.1|H78484.yu12d08.r1 Soares fetal liver spleen INFLS Homo sapiens cDNA clone IMAGE:233583 5' similar to gb:X59770 INTERLEUKIN-1

35 RECEPTOR, TYPE II PRECURSOR (HUMAN);, mRNA sequence
 GGATGGGAGATACTGTTGTGGTCACCTCTGGAAAATACATTCTGCTACTCTTAAA
 AACTAGTGACGCTCATACAAATCAACAGAAAGAGCTTCTGAAGGAAGACTTTAA
 AGCTGCTTCTGCCACGTGCTGCTGGGTCTCAGTCCTCCACTTCCCGTGTCTCTGG
 AAGTTGTCAGGAGCAATGTTGCGCTTGACGTGTTGGTAATGGGAGTTTCTGCCT
 40 TCACCCTTCAGCCTGCGGCACACACAGGGGCTGCCAGAAGCTGCCGGTTTTCGTGG
 GAGGCATTACAAGCGGGAGTTCAGGCTGGAAGGGGAGCCTGTAGCCCTGAGGTG
 CCCCCAGGTGCCCTACTGGTTGTGGGGCCTCTGTTTCAGCCCCCGCATCAACCTNA
 ACATGGGCATTAAAAATTGACTCTTNTTAGGGACGGTCCCAGGGAGTAAGAAGN
 AGACACGGATGTGGGTCCCAGGGACGGTTNCG

45

SEQ ID NO: 220

>3386358H1

GCCGCGCTACCAGATTGCACCGGGGCTGATTTGGGGGCTGGGAATTTGCCATTCT
 GCTGTACAGACACTGATTTTTTTTCTTCTTTTAAAAAGCAAGATTTTAGGTGAT

GGGCAAGTCAGAAAGTCAGATGGATATAACTGATATCAAACTCCAAAGCCAAA
GAAGAAACAGCGATGGACTCCACTGGAGATCAGCCTCTCGGTCCTTGTCTGCTC
CTCACCATCATAGCTGTGACAATGATC

5 SEQ ID NO: 221

>gi|759483|gb|R07560.1|R07560 ye97g06.r1 Soares fetal liver spleen 1NFLS Homo sapiens
cDNA clone IMAGE:125722 5' similar to SP:DEOK_HUMAN P27707 DEOXYCYTIDINE
KINASE ;, mRNA sequence

10 ATGGCCGCGGCACNCTNCTTTCTAAGTCGGCTTCGAGCACCCCTTCAGTTCCATGG
CCAAGAGCCCCTCGAGGGCGTTTCTCTCCAGAGGCCTGCACGCGGGGCGNGG
CCCANANGGCTTCTCCATCGAAGGCAACATTGGCCTGCACTGCCCAAAGTCTTG
AACTTGCTGGATATGATGTACCGGGAGCCAGCACGATGGTCCTACACATTCCAG
ACATTTTCTTTTGTAGCCGCCTGAAAGTACAGCTGGGAGCCCTTCCCTGAGGAA
ACTCTTTACAGGGCCAGGGAAGCCAGTTACAGATCTTTTGAGGAGGTCTGTGTAA
15 CAGTGGACAGGGTTCCATTTTGTAGGGTTTGGATGGAACATTTTC

SEQ ID NO: 222

>4730434H1

20 GCTGGGAGAAGCAGGAATCTGCGCTCGGGTTCCGCAGATGCAGAGGTTGAGGTG
GCTGCGGGACTGGAATCATCGGGCAGAGGTCTCACAGCAGCCAAGGAACCTGG
GGCCCGCTCCTCCCCCTCCAGGCCATGAGGATTCTGCAGTTAATACTGCTTGCT
CTGGCAACAGGGCTTGTAGGGGGAGAGACCAGGATCATCAAGGGGTTGAGTGC
AAGCCTCACTCCCAGCCCTGGCAGGCAGCCCTGTTGAGAAAGACGC

25 SEQ ID NO: 223

>gi|815554|gb|R53652.1|R53652 yg84c05.r1 Soares infant brain 1NIB Homo sapiens cDNA
clone IMAGE:40056 5' similar to SP:PGG2_RAT Q00657 CHONDROITIN SULFATE
PROTEOGLYCAN NG2 ;, mRNA sequence

30 AGGGCGAGGTGGTCTTTGCCTTACCAACTTCTCCTCCTCTCATGACCACTTCAGA
GTCCTGGCACTGGCTAGGGGTGTCAATGCATCAGCCGTAGTGAACGTCACTGTGA
GGGCTCTGCTGCATGTGTGGGCAGGTGGGCCATGGCCAGNGGTGCCACCCTGCG
CCTGGACCCACCGTCCTAGATGCTGGCGAGCTGGCCAACCGCACAGGCAGTGT
GCCGCGCTTCCGCCTCCTGGAGGGACCCCGGATGGCCCGNTGGTCCGCGTGCCC
CGAGCCAGGACGGAGCCCGGGGGAAGCCAGCTGGTGGAGCAGTTCACTNAGCA
35 GGACCTTGAGGACGGGAGGCTNNGGCTGGAGGTGGGCAGGCCAGAGGGGAGGG
CCCCCGGCCGNCAGGTGNACAATTCTCAATTTTNGAGCTTTTNGGGCAC

SEQ ID NO: 224

>gi|2051920|gb|AA398883.1|AA398883 zt64f10.s1 Soares testis_NHT Homo sapiens cDNA
clone IMAGE:727147 3' similar to gb:S66896 SQUAMOUS CELL CARCINOMA
ANTIGEN (HUMAN);, mRNA sequence

40 TATGTCACTATTTTATTGATGATGTGTTTTATAGAATCACAAAATTTAGAAACATA
AGAAGGATTTAGGTATCACCTAAATTCAAAGAAATGTGTGTTTCTAGGTTGCTAA
ATTCAAAGAAAAAGTATGATTTGGTTTGGTTCATTTAAAACAGGTCACAAACAGA
45 ATTATATTTCAAATTTAGAAGATACGGTATTAAGTGATTCATCTTATTTTGGACAT
TTTTCTCAAGGAGAATTTTCTGGAAGAAAAAGTACATTTATATGTGGGCTTAT
TAAGAGAAAGAGAGAAAGGCATGCTATTTTAATCATTAATTTCTTGATGATGAC
GATCATCATCAAGATGAGAAAGAAAGAAATATGAGCCAAGAGAATCTGTTGTT
GCCAGCAATCAGTTTACCAGAACATCTGCAGGTGAACATTTTCCAAATGGAGTGA

CAGACTAATTGCATCTACGGGGATGAGAATCTGCCATAGAGAGGATGCTGTGGG
CTTATTTTGCTTATGTAGATAGGAAGGGTGATACATGGA

SEQ ID NO: 225

5 >gi|2432448|gb|AA598776.1|AA598776 ae38a04.s1 Gessler Wilms tumor Homo sapiens
cDNA clone IMAGE:898062 3' similar to TR:G468032 G468032 P55CDC.; mRNA
sequence
AAAAAAAAAACATGAAGGGAGACATGACTTTATTAGAAAAATAAAAAACAAC
GAGGTGATGGGTGGTCTTCAGCGGATCCTTGGTGGATGAGGCTGCTTTTGGCTG
10 CACTGGCCTTCTCCCGCTCCCGCCGCCGCGCAGGGTCCAACCTCAAACAGCGCCA
TAGCCTCAGGGTCTCATCTGCTGCTGCGGATGCCACTGTGGCCCCATCTGGGCTC
ATGGTCAGACTCAGGACCCGGGATGTGTGACCTTTGAGTTCAGCCACCTTGGCCA
TGGTTGGGTACTTCCAAATAACTAGCTGATTCTGTGCAAAGCCATGGCCTGAGAT
GAGCTCCTTGTAAGGGGGAGACCAGAGGATGGAGCACACCTGGGAATGGGCATC
15 CACGGCACTCAGACAGGCCCCAGAGCAAAAATTCCAGATGCGAATGTGTGATC
ACTGGTGCACCCTCCTGTGGCAAGGACATTTGA

SEQ ID NO: 226

20 >gi|2102846|gb|AA423867.1|AA423867 zv79f01.s1 Soares_total_fetus_Nb2HF8_9w Homo
sapiens cDNA clone IMAGE:759865 3', mRNA sequence
TTTTCATTTTTGAGTAATTTATTTAAATTTGTGAATCTAGAAAAATGTGTGTTATA
TATTTATATACAGGGAATAACAAAAGTTAAGTGTTTAATTGGAAAGAAAACCTGT
GACTGATAATATGTTGTAATTACCATTTTATAATATTACTTTCCATTGCAATGACT
TAAAATGAAGAAATAAGAATAGGAATAATTATGCTAACAAATTCACCTTGTGTTTC
25 TGTGCCACTAAATTTCTTTAGGATCAAGAACTCTTTCATATTCAGACATTAAACA
ATATTCAAATAATTTTATAAAATAGACATACAAGTTTACTCATATTAATAAAAAACA
AGTTGATTTTCATTTCTCTGTA

SEQ ID NO: 227

30 >gi|3087789|emb|Y14734.1|HSY14734 Homo sapiens mRNA for cathepsin L2
CGGCTGTAATCTCAGAGGCTTGTGTTGCTGAGGGTGCCTGCGCACGTGCGACGGCT
GCTGGTTTTGAAACATGAATCTTTCGCTCGTCCTGGCTGCCTTTTGCTTGGGAATA
GCCTCCGCTGTTCCAAAATTTGACCAAAATTTGGATACAAAGTGGTACCAGTGGA
AGGCAACACACAGAAGATTATATGGCGCGAATGAAGAAGGATGGAGGAGAGCA
35 GTGTGGGAAAAGAATATGAAAATGATTGAACTGCACAATGGGGAATACAGCCAA
GGGAAACATGGCTTCACAATGGCCATGAATGCTTTTCCTGACATGACCAATGAAG
AATTCAGGCAGATGATGGGTGCTTTTCGAAACCAGAAATTCAGGAAGGGGAAAG
TGTTCCGTGAGCCTCTGTTTCTTGATCTTCCCAAATCTGTGGATTGGAGAAAGAA
AGGCTACGTGACGCCAGTGAAGAATCAGAAACAGTGTGGTTCCTTGTGTTGGGCTTTT
40 AGTGCGACTGGTGCTCTTGAAGGACAGATGTTCCGGAAAACCTGGGAAACTTGTCT
CACTGAGCGAGCAGAATCTGGTGGACTGTTTCGCGTCCTCAAGGCAATCAGGGCT
GCAATGGTGGCTTCATGGCTAGGGCCTTCCAGTATGTCAAGGAGAACGGAGGCC
TGGACTCTGAGGAATCCTATCCATATGTAGCAGTGGATGAAATCTGTAAGTACAG
ACCTGAGAATTCTGTTGCTAATGACACTGGCTTCACAGTGGTCGCACCTGGAAAG
45 GAGAAGGCCCTGATGAAAGCAGTCGCAACTGTGGGGCCCATCTCCGTTGCTATG
GATGCAGGCCATTCGTCTTCCAGTTCTACAAATCAGGCATTTATTTTGAACCAG
ACTGCAGCAGCAAAAACCTGGATCATGGTGTTCCTGGTGGTTGGCTACGGCTTTGA
AGGAGCAAATTCGAATAACAGCAAGTATTGGCTCGTCAAAAACAGCTGGGGTCC
AGAATGGGGCTCGAATGGCTATGTAAAAATAGCCAAAGACAAGAACAACCACTG

TGGAATCGCCACAGCAGCCAGCTACCCCAATGTGTGAGCTGATGGATGGTGAGG
AGGAAGGACTTAAGGACAGCATGTCTGGGGAAATTTTATCTTGAAACTGACCAA
ACGCTTATTGTGTAAGATAAACCAGTTGAATCATTGAGGATCCAAGTTGAGATTT
TAATTCTGTGACATTTTACAAGGGTAAAATGTTACCACTACTTTAATTATTGTTA
5 TACACAGCTTTATGATATCAAAGACTCATTGCTTAATTCTAAGACTTTTGAATTT
CATTTTTTAAAAAGATGTACAAAACAGTTT

SEQ ID NO: 228

>gi|967948|gb|R93782.1|R93782 yq35f04.r1 Soares fetal liver spleen 1NFLS Homo sapiens

10 cDNA clone IMAGE:197791 5', mRNA sequence

TGGATTTGGATGCTGCAAAAACGAGACTAAAAAAGGCAAAAGCTGCAGAAACTA
GAAATTCATCTGAACAGGAATTAAGAATAACTCAAAGTGAATTTGATCGTCAAG
CAGAGATTACCAGACTTCTGCTAGAGGGAATCAGCAGTACACATGCCCATCACCT
TCGCTGTCTGAATGACTTTGTAGAAGCCCAGATGACTTACTATGCACAGTGTTAC
15 CAGTATATGTTGGACCTCCAGAAACAACCTGGGAAGTTTTCCATCCAATTATCTTA
GTAACAACAATCAGACTTCTGTGACACCTGTACCATCAGTTTTACCAAATGCGAT
TGGTTCTTCTGCCATGGCTTTCAACAAGTGGCCTAGTAATCACCTCTCCTTCCAAC
CTCAGTGACCTTAAGGGAGTGTAGTGGGCAGCAGGAAAGGGCCGGGGTTCTCTT
ATGGATTTATGGATGGCAGCAAACAGTACTGGAATTATTCATTCTGGGCAGTTG
20 AGGGTGATCANTGTGTTTCAAGTGTGTTGGGATGGGATTGAGNTTGGCTAATTGGG
GGNAAGGGGAACCCNGGAGGGCAAGGTGCCATTA

SEQ ID NO: 229

>2723646H1

25 GTTCCGCAGATGCAGAGGTTGAGGTGGCTGCGGGACTGGAAGTCATCGGGCAGA
GGTCTCACAGCAGCCAAGGAACCTGGGGCCCGCTCCTCCCCCTCCAGGCCATGA
GGATTCTGCAGTTAATCCTGCTTGCTCTGGCAACAGGGCTTGTAGGGGGAGAGAC
CAGGATCATCAAGGGGTTTCGAGTGCAAGCCTCACTCCCAGCCCTGGCAGGCAGC
CCTGTTTCGAGAAGACGCGGCTACTCTGT

30

SEQ ID NO: 230

>gi|1335871|gb|U46005.1|HSU46005 Human MDC15 mRNA, complete cds

ATGCGGCTGGCGCTGCTCTGGGCCCTGGGGCTCCTGGGCGCGGGCAGCCCTCTGC
CTTCTGGCCGCTCCCAAATATAGGTGGCACTGAGGAGCAGCAGGCAGAGTCAG
35 AGAAGGCCCGAGGGAGCCCTTGGAGCCCCAGGTCCTTCAGGACGATCTCCCAA
TTAGCCTCAAAAAGGTGCTTCAGACCAGTCTGCCTGAGCCCCTGAGGATCAAGTT
GGAGCTGGACGGTGACAGTCATATCCTGGAGCTGCTACAGAATAGGGAGTTGGT
CCCAGGCCGCCCAACCCTGGTGTGGTACCAGCCCGATGGCACTCGGGTGGTCAGT
GAGGGACACACTTTGGAGAACTGCTGCTACCAGGGAAGAGTGCGGGGATATGCA
40 GGCTCCTGGGTGTCCATCTGCACCTGCTCTGGGCTCAGAGGCTTGGTGGTCCTGA
CCCCAGAGAGAAGCTATACCCTGGAGCAGGGGCCTGGGGACCTTCAGGGTCCTC
CCATTATTTTCGGAATCCAAGATCTCCACCTGCCAGGCCACACCTGTGCCCTGAG
CTGGCGGGAATCTGTACACACTCAGACGCCACCAGAGCACCCCTGGGACAGCG
CCACATTCGCCGGAGGCGGGATGTGGTAACAGAGACCAAGACTGTGGAGTTGGT
45 GATTGTGGCTGATCACTCGGAGGCCCAGAAATACCGGGACTTCCAGCACCTGCTA
AACCGCACACTGGAAGTGGCCCTCTTGCTGGACACATTCTTCCGGCCCCTGAATG
TACGAGTGGCACTAGTGGGCCTGGAGGCCTGGACCCAGCGTGACCTGGTGGAGA
TCAGCCCCAAACCAGCTGTCAACCCTCGAAAACCTCCTCCACTGGCGCAGGGCACA
TTTGCTGCCTCGATTGCCCCATGACAGTGCCAGCTGGTGACTGGTACTTCATTCT

CTGGGCCTACGGTGGGCATGGCCATTGAGAACTCCATCTGTTCTCCTGACTTCTC
AGGAGGTGTGAACATGGACCACTCCACCAGCATCCTGGGAGTCGCCTCCTCCATA
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GCCCCTGTCCAGGTCCAGCCCCAGCCAAGACCTGCATCATGGAGGCCTCCACAG
5 ACTTCCTACCAGGCCTGAACTTCAGCAACTGCAGCCGACGGGCCCTGGAGAAAG
CCCTCCTGGATGGAATGGGCAGCTGCCTCTTCGAACGGCTGCCTAGCCTACCCCC
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GGCTTCCTGGATGACTGCGTCGATCCCTGCTGTGATTCTTTGACCTGCCAGCTGA
GGCCAGGTGCACAGTGTGCATCTGACGGACCCTGTTGTCAAAATTGCCAGCTGCG
10 CCCGTCTGGCTGGCAGTGTGTCCTACCAGAGGGGATTGTGACTTGCCCTGAATTC
TGCCCAGGAGACAGCTCCCAGTGTCCCCCTGATGTCAGCCTAGGGGATGGCGAG
CCCTGCGCTGGCGGGCAAGCTGTGTGCATGCACGGGCGTTGTGCCTCCTATGCCC
AGCAGTGCCAGTCACTTTGGGGACCTGGAGCCCAGCCCGCTGCGCCACTTTGCCT
CCAGACCGCTAATACTCGGGGAAATGCTTTTGGGAGCTGTGGGCGCAACCCCAG
15 TGGCAGTTATGTGTCCTGCACCCCTAGAGATGCCATTTGTGGGCAGCTCCAGTGC
CAGACAGGTAGGACCCAGCCTCTGCTGGGCTCCATCCGGGATCTACTCTGGGAG
ACAATAGATGTGAATGGGACTGAGCTGAACTGCAGCTGGGTGCACCTGGACCTG
GGCAGTGATGTGGCCCAGCCCCTCCTGACTCTGCCTGGCACAGCCTGTGGCCCTG
GCCTGGTGTGTATAGACCATCGATGCCAGCGTGTGGATCTCCTGGGGGCACAGG
20 AATGTCGAAGCAAATGCCATGGACATGGGGTCTGTGACAGCAACAGGCACTGCT
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GCTCCCTGACCACAGGGCTGCTCCTCAGCCTCCTGGTCTTATTGGTCTTGGTGTATG
CTTGGTGCCAGCTACTGGTACCGTGCCCGCCTGVACCAGCGACTCTGCCAGCTCA
AGGGACCCACCTGCCAGTACAGGGCAGCCCAATCTGGTCCCTCTGAACGGCCAG
25 GACCTCCGCAGAGGGCCCTGCTGGCACGAGGCACTAAGTCTCAGGGGCCAGCCA
AGCCCCACCCCCAAGGAAGCCACTGCCTGCCGACCCCCAGGGCCGGTGCCCAT
CGGGTGACCTGCCCGGCCAGGGCCTGGAATCCCGCCCCTAGTGGTACCCTCCAG
ACCAGCGCCACCGCCTCCGACAGTGTCTCGCTCTACCTCTGACCTCTCCGGAGG
TTCCGCTGCCTCCAAGCCGGAAGTATAGGGCTTCAAGAGGCGGGCGTGCCCTCTGGA
30 GTCCCCTACCATGACTGAAGGCGCCAGAGACTGGCGGTGTCTTAAGACTCCGGG
CACCGCCACGCGCTGTCAAGCAACACTCTGCGGACCTGCCGGCGTAGTTGCAGC
GGGGGCTTGGGGAGGGGCTGGGGGTGGACGGGATTGAGGAAGGTCCGCACAG
CCTGTCTCTGCTCAGTTGCAATAAACGTGACATCTTGGGAGCGTTAA

35 SEQ ID NO: 231

>gi|2207808|gb|AA479252.1|AA479252 zv17f03.r1 Soares_NhHMPu_S1 Homo sapiens
cDNA clone IMAGE:753917 5', mRNA sequence

AAGAAGTCCAGTGTGTCCAGTTAAACAGAAATAAATTAAACTCTTCATCAACA
AAGACCTGTTTTTGTGACTGCCTTGAGTTTTATCAGAATTATTGGCCTAGTAATCC
40 TTCAGAAACACCGTAATTCTAAATAAACCTCTTCCCATACACCTTTCCCCCATAA
GATGTGTCTTCAACACTATAAAGCATTTGTATTGTGATTTGATTAAAGTATATATTT
GGTTGTTCTCAATGAAGAGCAAATTTAAATATTATGTGCATTTGTAAATACAGTA
GCTATAAAATTTTCCATACTTCTAATGGCAGAATACAGGAGGCCATATTAAATAA
TACTGATGAAAGGCAGGACACTGCATTGTAAATAGGATTTTCTAGGCTCGGTAGG
45 CAGAAAGAATTATTTTTCTTTGAA

SEQ ID NO: 232

>gi|681270|gb|T70122.1|T70122 yc17c10.r1 Stratagene lung (#937210) Homo sapiens cDNA
clone IMAGE:80946 5' similar to SP:MALK_ECOLI P02914

MALTOSE/MALTODEXTRIN TRANSPORT ATP-BINDING PROTEIN ;, mRNA
sequence

NTTATACTCACCCACAANTTTGTGACCCGANTGTAATGAAAGCCTCTGCAAATTG
AAAACATCATTGATCAAGAGGTGCAGACATTATCTGGTGGTGAACCTACAGCGAG
5 TAGCTTTAGCCCTTTGCTTGGGCAAACCTGCTGATGTCTATTTAATTGATGAACCA
TCTGCATATTTGGATTCTGAGCAAAGACTGATGGCAGCTCGAGTTGTCAAACGTT
TCATACTCCATGCAAAAAAGACAGCCTTTGTTGTGGAACATGACTTCATCATGGC
CACCTATCTAGCGGATCGGTNCATCGTTTTTGTGATGGTGTTCATCTAAGGAACAC
AGTTGCAAACAGTCCTCAAACCCTTTGGGCTGGGCTTGAATAAATTTTTGTGCTT
10 CAGCTTGAAATTTACATTTAGGAGGNGTTCCAAACCAACTATTGGGCCACGGA
TTAAACAACTTATTTCAATTTAGGGTGTAGGNC

SEQ ID NO: 233

>3447387H2

15 TAATGTTTATGCAAAGTATTGATTCTGTTGTTGAATTTTGTAACGAAAAAACCCA
TAAATCAAGAAGCTCCAAGCCTACAAAACATAAAGTGCAATTTTAGAAGTACAT
GGGAGGTGATTAGCAATTCTGAGGATTTTAAAAACACCATACCCATGGTGACAC
CACCTCCTCCACCTGTCTTCTCATTGCTGAAGATCAGTCAAAGAATTGTGTGCTTA
GTTCTTGATAAGTCTGGAAGCATGGGGGGTAAGGACCGCCTAAATCGAATGAAT
20 CAAGCA

SEQ ID NO: 234

>2863932H1

GGGGGCTGGGAATTTGCCATTCTGCTGTACAGACACTGATTTTTTTTTCTTCTTT
25 TAAAAAGCAAGATTTTAGGTGATGGGCAAGTCAGAAAGTCAGATGGATATAACT
GATATCAACACTCCAAAGCCAAAGAAGAAACAGCGATGGACTCCACTGGAGATC
AGCCTCTCGGTCCTTGTCTGCTCCTCACCATCATAGCTGTGACAATGATCGCACT
CTATGCAACCTACGATGATGGTAATTGCAAGTCATCAGACTGCATAA

30 SEQ ID NO: 235

>5208013H1

GAAACGGATGACCAGGGCAAATACATGACCCTAGTTTTGTCCCGGATCGACCTA
GTGTTCAATTGTTCTGTTCACTGGAGAATTTGTGCTGAAGCTCGTCTCCCTCAGACA
CTACTACTTCACTATAGGCTGGAACATCTTTGACTTTGTGGTGGGGATTCTCTCCA
35 TTGTAGGTATGTTTCTGGCTGAGATGATAGAAAAGTATTTTGTGTCCCTACCTTG
GTCCGAGTGATCCGTCTTGCCA

SEQ ID NO: 236

>873192H1

40 CAGCGATGTCTNACCACCGGTGCTGCAACCCCTGCTGNTGNTGNTGNCTCTGCT
GAATGTGGAGCCTTNCGGGGCCAAAATGATCCGCATCCCTNTTCATCGAGTCCAA
NCTGGANGCAGGATCCTGAANCTACTGAGGGGATGGAGAGAACCAGCAGAGCTC
CCCAAGTTGGGGGCCC

45 SEQ ID NO: 237

>gi|928147|gb|R83270.1|R83270 yp85c04.s1 Soares fetal liver spleen 1NFLS Homo sapiens
cDNA clone IMAGE:194214 3', mRNA sequence

NNNNNAGGGAAAAAAATGGAAAATTTATTAATTAGACAGTATGTGGGCATCCT
GTNCCACATGGGAATGAGAAGATGCTATAGGTNCTCTAAGTATTGCACAGTCTG

AAAAAATAACAAAAAAGGGAAGGGGAGGAAAAAATCACATGATATTGGG
ANCCATCTCACATTATGANTANTCTACCAAGAAACATTTAAAAAAGAAANCCCTT
TGTTTCTACAGTAGGCTTTAAGTTTATAGTTCTTGGGANTGACTGTATTCCATTGA
AGGACATCTCAGGTAACAGGGAAGGCTGTTTATAGGCAATCCCCATGTGGCAAAT
5 ATTAATAAANATATATANTTTTTTGCCAATTCATCTCTNGCCTTCACCCCGGGCA
ATCATGACATTTNCGAG

SEQ ID NO: 238

>gi|307424|gb|L12060.1|HUMRARG7A Homo sapiens retinoic acid receptor (gamma-7)

10 mRNA

CGGCAGAGTCAGTGTGCGGTTTGGGAGAAAATGTGTCTGGATATTTTGGGGCGGT
CACGTGGGCGGGCGGGCTCCGAGAGGCCCGGGACAGTCCCAGCCTAGAGCCGT
GCCCCCCCAGGAGCCCCCAGTACGGCGAGCCCCGGACATTGCGACGCTCCATC
CAAGAGACTGCCCGACGCCGGGACCTCGGGGCTCCGCCGCCTCCCTTCCCCCTCC
15 CACTCCAGCAGCTACGGCCAGTTCCCTCAACCTGACCCAGTATGTAGAAGCCAG
TCTCTGCAGGCGGCCAGCGGCGGTGGAGACACAGAGCACCAGCTCAGAGGAGAT
GGTGCCAAGCTCGCCCTCGCCCCCTCCGCCTCCTCGGGTCTACAAGCCATGCTTC
GTGTGCAATGACAAGTCCTCTGGCTACCACTATGGGGTCAGCTCTTGTGAAGGCT
GCAAGGGCTTCTTTGCGCGAAGCATCCAGAAGAACATGGTGTACACGTGTCACC
20 GCGACAAAACTGTATCATCAACAAGGTGACCAGGAATCGCTGCCAGTACTGCC
GGCTACAGAAGTGCTTCGAAGTGGGCATGTCCAAGGAAGCTGTGCGAAATGACC
GGAACAAGAAGAAGAAAGAGGTGAAGGAAGAAGGGTCACCTGACAGCTATGAG
CTGAGCCCTCAGTTAGAAGAGCTCATCACCAAGGTCAGCAAAGCCCATCAGGAG
ACTTTCCTCGCTCTGCCAGCTGGGCAAGTATACCAAGAACTCCAGTGCAGACC
25 ACCGCGTGACAGCTGGATCTGGGGCTGTGGGACAAGTTCAAGTGCAGCTGGCTACCA
AGTGCATCATCAAGATCGTGGAGTTTGCCAAGCGGTTGCCTGGCTTTACAGGGCT
CAGCATTGCTGACCAGATCACTCTGCTCAAAGCTGCCTGCCTAGATATCCTGATG
CTGCGTATCTGCACAAGGTACACCCCAGAGCAGGACACCATGACCTTCTCCGACG
GGCTGACCCTGAACCGGACCCAGATGCACAATGCCGGCTTCGGGGCCCTCACAG
30 ACCTTGCTTTTGCTTTGCTGGGCAGCTCCTGCCCCTGGAGATGGATGACACCGA
GACAGGGCTGCTCAGCGCCATCTGCCTCATCTGCGGAGACCGCATGGACCTGGA
GGAGCCCGAAAAAGTGGACAAGCTGCAGGAGCCACTGCTGGAAGCCCTGAGGCT
GTACGCCCGGCGCCGGCGGCCAGCCAGCCCTACATGTTTCGCAAGGATGCTAAT
GAAAATCACCGACCTCCGGGGCATCAGCACTAAGGGAGCTGAAAGGGCCATTAC
35 TCTGAAGATGGAGATTCCAGGCCCGATGCCTCCCTTAATCCGAGAGATGCTGGAG
AACCCTGAAATGTTTGAGGATGACTCCTCGCAGCCTGGTCCCCACCCCAATGCCT
CTAGCGAGGATGAGGTTTCTGGGGGCCAGGGCAAAGGGGGCCTGAAGTCCCCAG
CCTGACCAGGGCCCCCTGACCTCCCCGCTGTGGGGGTTGGGGCTTCAGGCAGCAG
ACTGACCATCTCCAGACCGCCAGTGACTGGGGGAGGACCTGCTCTGCCCTCTCC
40 CCAACCCCTTCCAATGAGCG

SEQ ID NO: 239

>1909132F6

CGCCATCCCATCTCCAAAATCCTCAGTCCTGTGATGACCTTTCCTACTTTATAGG
45 CCTAAGCATGCTGAGCGCCATCAGCACCGAGCGCTGCCTGTCCATCCTGTGGCCC
ATCTGGTACCACTGCCGCCGCCCCAGATACCTGTCATCGGTCATGTGTGCTCTGC
TCTGGGGCCCTGTCCCTGCTGCGGAGTATCCTGGAGTGGATGTTCTGTGACTTCCTG
TTTAGTGGTGTGATTCTGTTTGGTGTGAAACGTCAGATTTTATTACAATCGCGTG
GCTGGTTTTTTTATGTGTGGTTCTCTGTGGGTCCAGCCTGGTCCTACTGGTCAGGA

TTCTCTGTGGATCCCCGGAAGATGCCGCTGACCAGGCTGTACGTGACCATCCTCCT
CACAGTGCTGGTCTTCCTCCTCTGTGGCCTGCCCTTTGGCATTCAAGTGGGCCCTGT
TTTCCAGGATCCACCTGGATTGGAAAGTCTTATTTTGTTCATGTGCATCTAGTTTCC
ATTTTCCTGTCCGCTCTTAACAGCAGTGCCAACCCCATCATTTACTTCTTCGTGGG
5 CTCCTTTAGGCAGCGTCAAAATAGGCAGAACCTGAAGCTGGTTCTCCAGAGGGCT
CTGCAGGACACGCCTGAGGTGGATGAAGGTGGAGGGTGGCTTCCTCAGGAAACC
CTGGAGCTGTCGGGAAGCAGATTGGAGCAGTGAGGAAGAACCTCTGCCCTGTCA
GACAGGACTTTGAGAGCAATGCTGCCCTGNCACCTTGACAATTATATGC

10 SEQ ID NO: 240

>gi|1940577|gb|AA292583.1|AA292583 zt31e07.r1 Soares ovary tumor NbHOT Homo
sapiens cDNA clone IMAGE:723972 5' similar to TR:G562077 G562077 TATA-BINDING
PROTEIN ASSOCIATED FACTOR 30 KDA SUBUNIT. [1] ;, mRNA sequence
GCTGGAGCAGCTGCTGGGGGCACGGGACCGTTGGCGGCGCGGGCCAGGGGAGCC
15 AGCTGAGCGGCGTGGGGCGGCTCCGGTGTTCGGCGGGTGGCGCGGCGCCCCCGGA
GGCANTGATCATAACGGGGTTTACGTACTGCCGAGCGCGGCCAACGGAGACGTG
AAGCCCGTGGTGTCCAGCACGCCTTTGGTGGACTTCTTGATGCAGCTGGAAGATT
ACACGCCTACGATCCCAGATGCAGTGACTGGTTACTACCTGAACCGTGTCTGGCTT
TGAGGCCTCAGACCCACGCATAATTTCGGCTCATCTCCTTAGCTGCCCAGAAATTC
20 ATCTCAGATATTGCCAATGATGCCCTACAGCACTGCAAAATGGAAGGGCA

SEQ ID NO: 241

>2581223T6
CCCACCAGGACCAAGGCTTGGAGAGCAGATTGGACCTATTGATTATGTGTATATA
25 AAAAACAAGACATCTTTTAAAGCAAAGCTGGGCAAATTCTCTATGGAAAGGGCG
CCACTGGCACTTGATTTTGACTTTCCAAAGTGCAGCAATGTGTTCCAGAACAGCT
CAAATCCTAAAAGGTGAAGTTCAAGTTCTTTGGTGGCCCAGTTGTCAAGCCACTT
AAATAGCAAATCCTGATGGCTTGAGGATTTCAATTTCTCCAGCCCAGAGCATATTA
GCATAAGAAGAGTACAAGTAATCAAGCATTCTACACGGTGTCCAGGTGAAAACC
30 ATACAATCAGCAATAGTGTGGTCAAGTTTCAGCCATGAATATGAACTATACAAG
ACATATTTAAAAGATAACTCAAAGTTGAATTGCATTACAGTAACTCAATGGGGTC
TTAAATTTTCTTAATCTTTAAGAAAATTTATAAAGGGCNAACNATAATAAAAATA
GTAATAATATTTGTTTTTAAAAGTAGGNGTGAATGTTAAGAGNCATAAAGACTGC
TTATAG

35

SEQ ID NO: 242

>gi|728269|gb|T94781.1|T94781 ye33c06.s1 Stratagene lung (#937210) Homo sapiens cDNA
clone IMAGE:119530 3', mRNA sequence
ACAATTTGAATTATGAGAGTTCACTTTCAGACGAAGCACCTAACAGGAAATCTCT
40 CAAACACAGAAATGCTGGTTTAGCCACAAGATCAAAGGAAAAGATTGATTTTGT
ATGTCCGTGCAGTTTTTGAGAGTGCCTTACACATTTTCGTTTTACAGCAATCTT
TGTGTTTGAAGGGAGTTCTGATGTGGAAACAGCTTGCAGGGTTAAACCTGGATGG
CGCCCCTGTGATCAGACATTGCTCTGTTGTAATAAAAGTGTCTCAGTNCTCTTTC
CCNCTGATCCTCCTGCCTGTACTTCTCCTCGAGTTGCTGTTTCTCAGAATCTGCAC
45 AGTAAATGTGCCAATCTGGGGCTTTNCCGAANCCGGTTCAAACCTGACTGAAATC

SEQ ID NO: 243

>gi|1220042|gb|N67917.1|N67917 yz52h03.s1 Morton Fetal Cochlea Homo sapiens cDNA
clone IMAGE:286709 3' similar to gb:V01512_ma5 P55-C-FOS PROTO-ONCOGENE
PROTEIN (HUMAN);, mRNA sequence

5 TTTTTTTCGCATTCAACTTAAATGCTTTTATTGACAATGTCTTGGAACAATAAGCA
AACAATGCTTAAATTTTTCATTCAAATTCACCTTCCACATGTCAAAAGACCTCAA
GGTAGAAAAAATAAAATAAAATATAAATATCTGAGAATCCATCTTAATAAAT
AAATTA AAAACACAATAAAACGTTTTCATGGAAAAC TGTAATGTCAGAACATTC
10 AGACCACCTCAACAATGCATGATCAGTAACATTACAATGAACATTGATGTTGAA
GAAAAACTACAGTACATGGATATAGCTATTTATTTCTATCTACCAGAAAATAAAG
TCGTATCTTTTCTTAGTATAATATTGGGTCATTTCTAATCAGAACACACTATTGCC
AGGAACACAGTAGTTATTGTTAAATCAGCCGCACTAGATACCATTGGAATAT
CCAGCACCAGGTTAATTCCCATAATGNACCCCATAGG

15 SEQ ID NO: 244

>gi|187354|gb|M69226.1|HUMMAOAAA Human monoamine oxidase (MAOA) mRNA,
complete cds

GAATTCCTGACACGCTCCTGGGTCGTAGGCACAGGAGTGGGGGCCAAAGCATGG
AGAATCAAGAGAAGGCGAGTATCGCGGGCCACATGTTTCGACGTAGTCGTGATCG
20 GAGGTGGCATTTCAGGACTATCTGCTGCCAAACTCTTGACTGAATATGGCGTTAG
TGTTTTGGTTTTAGAAAGCTCGGGACAGGGTTGGAGGAAGAACATATACTATAAG
GAATGAGCATGTTGATTACGTAGATGTTGGTGGAGCTTATGTGGGACCAACCCAA
AACAGAATCTTACGCTTGTCTAAGGAGCTGGGCATAGAGACTTACAAAGTGAAT
GTCAGTGAGCGTCTCGTTCAATATGTCAAGGGGAAAACATATCCATTTCTGGGGCG
25 CCTTCCACCAGTATGGAATCCCATTCATATTTGGATTACAATAATCTGTGGAG
GACAATAGATAACATGGGGGAAGGAGATTCCAACCTGATGCACCCTGGGAGGCTCA
ACATGCTGACAAATGGGACAAAATGACCATGAAAGAGCTCATTGACAAAATCTG
CTGGACAAAGACTGCTAGGCGGTTTGCTTATCTTTTGTGAATATCAATGTGACC
TCTGAGCCTCACGAAGTGTCTGCCCTGTGGTTCTTGTGGTATGTGAAGCAGTGCG
30 GGGGCACCACTCGGATATTCTCTGTCAACCAATGGTGGCCAGGAACGGAAGTTTGT
AGGTGGATCTGGTCAAGTGAGCGAACGGATAATGGACCTCCTCGGAGACCAAGT
GAAGCTGAACCATCCTGTCACTCACGTTGACCAGTCAAGTGACAACATCATCATA
GAGACGCTGAACCATGAACATTATGAGTGCAAATACGTAATTAATGCGATCCCTC
CGACCTTGACTGCCAAGATTCACCTCAGACCAGAGCTTCCAGCAGAGAGAAACC
35 AGTTAATTCAGCGTCTTCCAATGGGAGCTGTCATTAAGTGCATGATGTATTACAA
GGAGGCCTTCTGGAAGAAGAAGGATTACTGTGGCTGCATGATCATTGAAGATGA
AGATGCTCCAATTTCAATAACCTTGGATGACACCAAGCCAGATGGGTCACTGCCT
GCCATCATGGGCTTCATTCTTGCCCGGAAAGCTGATCGACTTGCTAAGCTACATA
AGGAAATAAGGAAGAAGAAAATCTGTGAGCTCTATGCCAAAGTGCTGGGATCCC
40 AAGAAGCTTTACATCCAGTGCATTATGAAGAGAAGAACTGGTGTGAGGAGCAGT
ACTCTGGGGGCTGCTACACGGCCTACTTCCCTCCTGGGATCATGACTCAATATGG
AAGGGTGATTCTGCAACCCGTGGGCAGGATTTTCTTTGCGGGCACAGAGACTGCC
ACAAAGTGAGCGGCTACATGGAAGGGGCAGTTGAGGCTGGAGAACGAGCAGC
TAGGGAGGTCTTAAATGGTCTCGGGAAGGTGACCGAGAAAGACATCTGGGTACA
45 AGAACCTGAATCAAAGGACGTTCCAGCGGTAGAAATCACCCACACCTTCTGGGA
AAGGAACCTGCCCTCTGTTTCTGGCCTGCTGAAGATCATTGGATTTTCCACATCA
GTAAGTGCCTGGGGTTTGTGCTGTACAAATACAAGCTCCTGCCACGGTCTTGAA
GTTCTGTTCTTATGCTCTCTGCTCACTGGTTTTCAATACCACCAAGAGGAAAATAT
TGACAAGTTTAAAGGCTGTGTCATTGGGCCATGTTTAAGTGTACTGGATTTAACT

ACCTTTGGCTTAATTCCAATCATTGTTAAAGTAAAAACAATTCAAAGAATCACCT
AATTAATTTTCAGTAAGATCAAGCTCCATCTTATTTGTCAGTGTAGATCAACTCAT
GTTAATTGATAGAATAAAGCCTTGTGATCACTTTCTGAAATTCACAAAGTTAAAC
GTGATGTGCTCATCAGAAAC

5

SEQ ID NO: 245

>gi|1472327|gb|AA011215.1|AA011215 ze23f02.s1 Soares fetal heart NbHH19W Homo sapiens cDNA clone IMAGE:359835 3' similar to gb:M77693 DIAMINE

ACETYLTRANSFERASE (HUMAN);, mRNA sequence

10 TCCTCAGTAGTTTGAACACTTGCTGGCTATTTTTCTGTCCAAGTTCTCAGTAACT
TCGGCCTGTGTAGTCAGTGGTTCTACACAGCCGACACTACTTCTTACATAACACT
TGGTCTCTCTGGCTTCTGGAAAGGGCGAGGGGTACCTTCCGGAGTCCAGTGCTC
TTTCGGCACTTCTGCAACCAGGCAGTGGTAAAAGGGGTGCTCTCCAAAACCATCT
TCTAGCAGATCTTTTTTCAGTTAAGATTACTTGTCTTCCATGTATTTCATATTTAAG
15 CCAGCTCCTTGATCAGCCGAGTATGTCAGTGCAGTCGGCGGCAGTGGCTGGGCG
GATCACCGAATTTAGCCATTTTCGGTCTTTTTGCTTTTTCTTCCCTTTGCGGGACC
AGGGCCCCCTGGTACTTGAACAGTAGGAGGAAGGTGGGTTCNCAATCGGTCTC
CCGGGGANGCGGTN

20 SEQ ID NO: 246

>1693028H1

CACAGATGAAGGACGTGTTCTTCTTCTTCTTCTCCTCGGCGTGTGGCTGGTAGCC
TATGGCGTGGCCACGGAGGGGCTCCTGAGGCCACGGGACAGTGACTTCCCAAGT
ATCCTGCGCCGCGTCTTCTACCGTCCCTACCTGCAGATCTTCGGGCAGATTCCCA
25 GGAGGACATGGACGTGGCCCTCATGGAGCACAGCAACTGCTCGT

SEQ ID NO: 247

>2519384H1

GGCAGCCTCGCCAGCGGGGGCCCCGGGCCTGGCCATGCCTCACTGAGCCAGCGC
30 CTGCGCCTCTACCTCGCCGACAGCTGGAACCAAGTGCAGACCTAGTGGCTCTCACCT
GCTTCCTCCTGGGCGTGGGCTGCCGGCTGACCCCGGGTTTGTACCACCTGGGCGG
CACTGTCCTCTGCATCGACTTCATGGTTTTCACGGTGCAGGCTGCTTCACATCTTCA
CGGTCAA

35 SEQ ID NO: 248

>gi|787364|gb|R31521.1|R31521 yh72b04.s1 Soares placenta Nb2HP Homo sapiens cDNA clone IMAGE:135247 3', mRNA sequence

TTGGAGAATCAAATGGAAACACAGGGGGAAAGATATAGAGCTTCCGTCCACCAT
CTATGAAGCCCTCCACCTGCCTGACATCAAGTTTTTCTAATGTGTATGCATTGC
40 TGAAGGTCCTGTGTATTCTTCTGTGATGAAGGTTGAGAATGAGCGGTATGAAAA
TGGGACGAAAGCGTCTTTAAAGCATATTTGAGGGAACACTTTGACAGACCCAAA
GGTCAAGTACTTTGGCTTTTNCCTTAAACATAAATTTNGATATTAAA

SEQ ID NO: 249

45 >gi|1110336|gb|H96850.1|H96850 yw03b12.s1 Soares melanocyte 2NbHM Homo sapiens cDNA clone IMAGE:251135 3' similar to contains Alu repetitive element; mRNA sequence
TTTTTGAGGGCAACATCTCGCTTTATTTTTATTTATTTATTTATTTATTTATTTG
AGACAGAGTCTTAACACTGTTGCCAGGCTGGAGTGCAATGGCGTGATCTCAGCT
CACTGCAAGCTCTGCCTCCTGGATTTCATGCCTTTCTCCTGCCTCAGCCTCCCGAGT

AGCTGGGACCACAGGTGCCCACCACCACGCCAGCTAATTTTTTGTACTTTTAGT
 AGAGACAGGGTTTTACCGTGTTAGCCAGGATAGTCTCGATCTCCTGACCTCGTGA
 GCCGCCCCGCTCGGNCTCCCAAAGTGCTGGGATTACAGGCATGAGCACCGTGCCT
 GGCCACGTCCCTATTTTAGAAATGAGAGGAGTGACTGCACATAGGAAAAATGCC
 5 ACTTTTA

SEQ ID NO: 250

>gi|1177578|emb|X95383.1|OCCRYAB O.cuniculus mRNA for alpha-B-crystallin

CCGACACTCACCTAGCCACCATGGACATCGCTATCCACCACCCCTGGATCCGCCG
 10 CCCCTTCTTTCTTTTCACTCGCCCAGCCGCCTCTTTGACCAGTTCTTCGGAGAGC
 ACCTGTTGGAGTCTGATCTCTTCCCAACTTCTACTTCCCTGAGCCCCTTCTATCTT
 CGGCCACCCTCATTCTGCGGGCACCCAGCTGGATTGACACTGGACTCTCAGAGA
 TCGCCTGGAGAAGGACAGGTTCTCTGTCAACCTGGATGTGAAGCACTTCTCCCC
 AGAGGAGCTCAAGGTCAAAGTGTTGGGTGATGTGATTGAGGTGCACGGCAAACA
 15 TGAAGAGCGCCAGGATGAACATGGTTTCATCTCCAGGGAGTTCCACAGGAAATA
 CCGGATCCCAGCTGATGTGGACCCTCTCACCATTACTTCATCCCTGTCATCTGATG
 GGGTCTCACTGTGAATGGACCAAGGAAGCAAGCCCCTGGCCCAGAGCGCACCA
 TTCCATAAACCGTGAAGAGAAGCCTGCTGTCACTGCAGCCCCCAAGAAGTAG

20 SEQ ID NO: 251

>gi|2167332|gb|AA453663.1|AA453663 aal8e04.r1 Soares_NhHMPu_S1 Homo sapiens

cDNA clone IMAGE:813630.5' similar to gb:M54915 PIM-1 PROTO-ONCOGENE

SERINE/THREONINE-PROTEIN KINASE (HUMAN);, mRNA sequence

AATTCGGCCCGAGGGTCAGAACCTGCCATGGAAGTGTTTCTTCATCATGAGTT
 25 CTGCTGAATGCCGCGATGGGTGAGGTAGGGGGGAAACAGGTTGGGATGGGATAG
 GACTAGCACCATTTTAAGTCCCTGTACCTCTTCCGACTCTTTCTGAGTGCCTTCT
 GTGGGGACTCCGGCTGTGCTGGGAGAAATACTTGAACCTGCCTCTTTTACCTGCT
 GCTTCTCCAAAAATCTGCCTTGGGTTTTGTTCCCTATTGTTGCTCTCGTGTCTTCT
 TAACCCCTCCTTCATAATGAAGGGTGCATGGGAGA

30

SEQ ID NO: 252

>gi|2240364|gb|AA504204.1|AA504204 aa59h01.s1 NCI_CGAP_GCB1 Homo sapiens

cDNA clone IMAGE:825265 3', mRNA sequence

TTTTTAACTCATGTGGTTAACATGGTATTGTATAAAAAGAAAAAAAACACCA
 35 CTCAATACTTACTAAGCCTTGACAGACAGCTCAGAGTTGAGGCAGCATATTGGGCA
 TAGAGATCATAGGATTTGTATTATCCCTTGCAAGATGGAACCTCAACCAACACCA
 GAATTTTCCAATTCAAATTCAGTTTTAGTCGAGACCCAGCATAATTTTLAGAAA
 AAAGATTGGATTGTTGCTTTTCTTTTAATTTTCCATTCCTATTAGACAAATGACC
 AGAGGCAATGACAAAAGTAACTGTTTAAAAGGGATTCTCTCCAGAAGTTTTTC
 40 TAAAGGTTTAAAGTCCAGGCTTTCCATCCTTCTCTCCATCCTTTTCAATTTAAAAA
 GAAGGGTTTTGGAATATGTCAACCTTACTCAGCTTGCTATACAAA

SEQ ID NO: 253

>gi|1203432|gb|N59542.1|N59542 yv76d05.s1 Soares fetal liver spleen 1NFLS Homo

sapiens cDNA clone IMAGE:248649 3', mRNA sequence

GTGATTGAACAGAGGCAGTGTACTGGAGTTTGGAACCAGAAAGATGAATTACCT
 ATTGAAGTGGACCTTGGTAAAAAGTGCTGGTATCACTCTATATTGCTGCCCA
 TTCTTCGTGAGCAAACAACAGATAACAATCCACCCATGAAATTGGTCTGTGGTCA
 TATTATATCAAGAGATGCCCTGAATAAAATGTTTAATGGTAGCAAATTAATATGT

CCCTACTGTCCAATGGAACAAAGTCCAGGAGATGCCAAACAGATATTTTTCTGAA
 GAGATAACTTTAGTTTGCAATTTGTAAGTGAACTGAATCGTGGGTGCATTTTCAG
 AAGAGAACGTTCCATATAATGCAGCTAACCAAGGACTCCTGTGTTTCTATAAGCT
 AATGCTCCAGAACTTTTGCCAACCTGTTAGTGTACACACACTGAGGGGAGTGCT
 5 CCCGGTGAATATTATCATAGGGCCTTATT

SEQ ID NO: 254

>gi|2432801|gb|AA599176.1|AA599176 ae46c08.s1 Stratagene lung carcinoma 937218

Homo sapiens cDNA clone IMAGE:949934 3', mRNA sequence

10 TTGTAAAGAATTGAATTCTTTATTTGTGATATCCATAAACGTTGCTATTCTCTATT
 TCTATCCAGAAAGGCAATTTTCACCTATTATCACTTTTGTTCCTCTTATAAACA
 ACAACTTGAATGCTATTGCAGGAAAGGGCTACAAATATACATTTGTTAACCAAGC
 AGAATACACAGATATTTTGCTTTACAACTTGCACCTAAAATACCAGTATACGTAG
 CTGGTTCATTAGTTGTCATAGCAATTTAGGGGCTATTGCCAAGCTATGCATAGCAG
 15 TTTACATTTTCAAACCTCATATAGAAAGGGCTATTGTGATATGAACTGGCAACTA
 CATTCTGTGAAGCCCATCTCAGTTACAAGCAAATGTGTAACTTCCAATTCTGC
 AAAGAATTTTGATGGCAAACTTCCAATCTGATGCAATTGTCTTAAGCAAGTTT
 TTAAACAAATTGTTTCGCAGCTACTCTGCCATTCTGCCAGTAGATGGTGCT

20 SEQ ID NO: 255

>gi|659863|gb|T58002.1|T58002 yb19g05.r1 Stratagene fetal spleen (#937205) Homo sapiens

cDNA clone IMAGE:71672 5' similar to similar to gb:J04058 ELECTRON TRANSFER

FLAVOPROTEIN ALPHA-SUBUNIT (HUMAN), mRNA sequence

TGGTATCTGGTGGTTCGAGGCTTGAAGAGTGGAGAGAACTTTAAGTTGTTATATGA
 25 CTTGGCAGATCAACTACATGCTGCAGTTGGTGCTTCCCGTGCTGCTGTTGATGCT
 GGCTTTGTTCCCAATGACATGCAAGTTGGACAGACGGGAAAAATAGTAGCACCA
 GAACTTTATATTGCTGTTGGAATATCTGGGAGCCATCCAACATTTAGCTGGGGAT
 GAAAGACAGCAAGACAATTGTGGCCAATTAATAAAGACCCAGAAGCTCCCAATT
 TTCCCAAGTNGCCAGATTATGGGATTAGTTGCAGGTTTATTTTAAGGTAGTTCCT
 30 GGAANTGACTTGAGGTATT

SEQ ID NO: 256

>gi|182666|gb|M76672.1|HUMFMLPX Human FMLP-related receptor II (FMLP R II)

mRNA, complete cds

35 ATGGAAACCAACTTCTCCACTCCTCTGAATGAATATGAAGAAGTGCCTATGAGT
 CTGCTGGCTACACTGTTCTGCGGATCCTCCCATTGGTGGTGCTTGGGGTCACCTTT
 GTCCTCGGGGTCCTGGGCAATGGGCTTGTGATCTGGGTGGCTGGATTCCGGATGA
 CACGCACAGTCACCACCATCTGTTACCTGAACCTGGCCCTGGCTGACTTTTCTTTC
 ACGGCCACATTACCATTCCTCATTGTCTCCATGGCCATGGGAGAAAAATGGCCTT
 40 TTGGCTGGTTCCTGTGTAAGTTAATTCACATCGTGGTGGACATCAACCTCTTTGGA
 AGTGTCTTCTTGATTGGTTTCATTGCACTGGACCGCTGCATTTGTGTCCTGCATCC
 AGTCTGGGCCCAGAACCACCGCACTGTGAGTCTGGCCATGAAGGTGATCGTCGG
 ACCTTGGATTCTTGCTCTAGTCCTTACCTTGCCAGTTTTCTCTTTTTGACTACAGT
 AACTATTCCAAATGGGGACACATACTGTACTTTCAACTTTGCATCCTGGGGTGGC
 45 ACCCTGAGGAGAGGCTGAAGGTGGCCATTACCATGCTGACAGCCAGAGGGATT
 ATCCGGTTTGTCAATTGGCTTTAGCTTGCCGATGTCCATTGTTGCCATCTGCTATGG
 GCTCATTGCAGCCAAGATCCACAAAAAGGGCATGATTAAATCCAGCCGTCCTTA
 CGGGTCTCACTGCTGTGGTGGCTTCTTTCTTCATCTGTTGGTTTCCCTTTCAACTG
 GTTGCCCTTCTGGGCACCGTCTGGCTCAAAGAGATGTTGTTCTATGGCAAGTACA

AAATCATTGACATCCTGGTTAACCCAACGAGCTCCCTGGCCTTCTTCAACAGCTG
CCTCAACCCCATGCTTTACGTCTTTGTGGGCCAAGACTTCCGAGAGAGACTGATC
CACTCCCTGCCCAACAGTCTGGAGAGGGCCCTGTCTGAGGACTCAGCCCCAACTA
ATGACACGGCTGCCAATTGTGCTTCACCTCCTGCAGAGACTGAGTTACAGGCAAT
5 GTGAGG

SEQ ID NO: 257

>gi|1047029|gb|H73961.1|H73961 yu04e02.s1 Soares fetal liver spleen 1NFLS Homo
sapiens cDNA clone IMAGE:232826 3', mRNA sequence

10 TATGTTAGAAATTNCTTTATTATTACTTATCCTTATTAAGCGCCANNTTNAATGCT
GCAGAAAATTTCAAATCACCTTGATAACCCACTTNCTTTCCTCCCACCCAAATN
CTTGANCAAGAGTTTTTCAAGTAAAGACATGCTCTTCTCTCTCCTGTATAAACTT
TACGAAATAAAGGCCAAAAGATTGTGTACATCTTGCTGGGAAAATGCTGCCCGGG
GCTCTGGGAGACGGTGGGCTGCCCGGGCTCCCTTCACTGTCCGGGTCCTGAAAGG
15 ACTCTTGTTTATGGAAGTGTCTCTTCAAAAGGCAAGGTCCACCACTTGCTGGGG
GTTTATCATTCTGAGGGGTGCGAAAACCTTTTCTCACAAGGTCTCAGGTCCAGTCT
CTTGGCCTTAGGCTGTTGTAAGGGGTTTTCATCANTTCANCTTCCCTTTGTTTG
GAGGGTTGGGGATAANTGGGGTTAGGGGGGGNAACGGGGGTTTNGGGGGTTGG
GGGAATTAG

20

SEQ ID NO: 258

>gi|1477389|gb|L76631.1|HUMMGLUB Homo sapiens metabotropic glutamate receptor 1
beta (mGluR1beta) mRNA, complete cds

25 GCGCAGGTACTCAGGTATGTCTCAAGTCCATGTCTCCAAACAGACTCAGCATCT
AGCTCACCGCTGCCAACACGACTTCCACTGTACTCTTGATCAATTTACCTTGATGC
ACTACCGGTGAAGAACGGGGACTCGAATTCCTTACAAACGCCTCCAGCTTGATG
AGGCGGTCTGGAGGACCCAGAGGAGGAGACGAAGGGGAAGGAGGCGGTGGTG
GAGGAGGCAAAGGCCTTGGACGACCATTGTTGGCGAGGGGCACCACTCCGGGAG
AGGCGGCGCTGGGCGTCTTGGGGGTGCGCGCCGGGAGCCTGCAGCGGGACCAGC
30 GTGGGAACGCGGCTGGCAGGCTGTGGACCTCGTCCTCACCACCATGGTCGGGCTC
CTTTTGTTTTTTTTCCAGCGATCTTTTGGAGGTGTCCCTTCTCCCCAGAAGCCCC
GGCAGGAAAGTGTGCTGGCAGGAGCGTCGTCTCAGCGCTCGGTGGCCAGAATG
GACGGAGATGTCATCATTGGAGCCCTCTTCTCAGTCCATCACCAGCCTCCGGCCG
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35 AGGGTGGAGGCCATGTTCCACACGTTGGATAAGATCAACGCGGACCCGGTCCTC
CTGCCCAACATCACCTGGGCAGTGAGATCCGGGACTCCTGCTGGCACTCTTCCG
TGGCTCTGGAACAGAGCATTGAGTTCATTAGGGACTCTCTGATTTCCATTCGAGA
TGAGAAGGATGGGATCAACCGGTGTCTGCCTGACGGCCAGTCCCTCCCCCAGG
CAGGACTAAGAAGCCCATTGCGGGAGTGATCGGTCCCGGCTCCAGCTCTGTAGC
40 CATTCAAGTGCAGAACCTGCTCCAGCTCTTCGACATCCCCCAGATCGCTTATTCA
GCCACAAGCATCGACCTGAGTGACAAAACCTTTGTACAAATACTTCCTGAGGGTTG
TCCCTTCTGACACTTTGCAGGCAAGGGCCATGCTTGACATAGTCAAACGTTACAA
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GGACGCTTTCAAAGAGCTGGCTGCCCAGGAAGGCCTCTGTATCGCCCATCTGAC
45 AAAATCTACAGCAACGCTGGGGAGAAGAGCTTTGACCGACTCTTGCGCAAACCTC
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5 GGCTGCAGAACATGCACCATGCCCTCTGCCCTGGCCACGTGGGCCTCTGCGATGC
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10 TGAACAAGAGTGGAGTGGTGGGCTGTGTGTCAGTGAGCCTTGCTTAAAGGGCC
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GATGGTGGCCCAATGCAGATCTAACAGGCTGTGAGCCCATTCTGTGCGCTATCT
TGAGTGGAGCAACATCGAATCCATTATAGCCATCGCCTTTTCATGCCTGGGAATC
15 CTTGTTACCTTGTGTTGTACCCCTAATCTTTGTACTGTACCGGGACACACCAGTGGT
CAAATCCTCCAGTCGGGAGCTCTGCTACATCATCCTAGCTGGCATCTTCCTTGGTT
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CGCCTCTTGGTTGGCCTCTCCTCTGCGATGTGCTACTCTGCTTTAGTGACTAAAAC
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20 GCCCAGGTTTCATGAGTGCCTGGGCTCAGGTGATCATTGCCTCAATTCTGATTAGT
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TGTCTACCCAAGTATCAAGGAAGTCTACCTTATCTGCAATACCAGCAACCTGGG
TGTGGTGGCCCTTTGGGCTACAATGGAATCCTCATCATGAGCTGTACCTACTAT
GECTTCAAGACCCGCAACGTGCCCCGCAACTTCAACGAGGCCAAATATATCGCGT
25 TCACCATGTACACCACCTGTATCATCTGGCTAGCTTTTGTGCCCATTTACTTTGGG
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CTCTGGGGTGCATGTTCACTCCCAAGATGTACATCATTATTGCCAAGCCTGAGAG
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30 CAGGGGCAGGGAATGCCAAGAAGAGGCAGCCAGAATTCTCGCCCACCAGCCAAT
GTCCGTCGGCACATGTGCAGCTTTGAAAACCCCCACACTGCAGTGAATGTTTCTA
ATGGCAAGTCTGTGTATGTTCTGAACCAGGTGGAGGACAGGTGCCCAAGGGAC
AGCATATGTGGCACCGCCTCTCTGTGCACGTGAAGACCAATGAGACGGCCTGCA
ACCAAACAGCCGTCATCAAACCCCTCACTAAAAGTTACCAAGGCTCTGGCAAGA
35 GCCTGACCTTTTC

SEQ ID NO: 259

>gi|1374674|gb|L78207.1|HUMSUR1RNA Homo sapiens sulfonylurea receptor (SUR1)

mRNA, complete cds

40 GCCAGCTGAGCCCGAGCCCAGACCGCGCCCGCGCCGCGCCATGCCCTGGCCTTCTG
CGGCAGCGAGAACCACTCGGCCGCCTACCGGGTGGACCAGGGGGTCTCAACAA
CGGCTGCTTTGTGGACGTCCTCAACGTGGTGCCGCACGTCTTCTACTCTTCATCA
CCTTCCCCATCCTCTTCATTGGATGGGGAAGTCAGAGCTCCAAGGTGCACATCCA
CCACAGCACATGGCTTCATTTCCCTGGGCACAACCTGCGGTGGATCCTGACCTTC
45 ATGCTGCTCTTCGTCCTGGTGTGTGAGATTGCAGAGGGCATCCTGTCTGATGGGG
TGACCGAATCCCACCATCTGCACCTGTACATGCCAGCCGGGATGGCGTTCATGGC
TGCTGTACCTCCGTGGTCTACTATCACAACATCGAGACTTCCAACCTCCCCAAG
CTGCTAATTGCCCTGCTGGTGTATTGGACCCTGGCCTTCATACCAAGACCATCA
AGTTTGTCAAGTTCTTGGACCACGCCATCGCGTTCTCGCAGGTACGCTTCTGCCTC

ACAGGGCTGCTGGTGATCCTCTATGGGATGCTGCTCCTCGTGGAGGTCAATGTCA
TCAGGGTGAGGAGATACATCTTCTTCAAGACACCGAGGGAGGTGAAGCCTCCCG
AGGACCTGCAAGACCTGGGGGTACGCTTCTGACGCCCTTCGTGAATCTGCTGTC
CAAAGGCACCTACTGGTGGATGAACGCCTTCATCAAGACTGCCACAAAGAAGCC
5 CATCGACTTGCGAGCCATCGGGAAGCTGCCCATCGCCATGAGGGCCCTCACCAA
CTACCAACGGCTCTGCGAGGCCTTTGACGCCCAGGTGCGGAAGGACATTCAGGG
CACTCAAGGTGCCCGGGCCATCTGGCAGGCACTCAGCCATGCCTTCGGGAGGCG
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10 AGCCCAAGACACAATTTCTCGGGGTTTACTTTGTCTCATCCCAAGAGTTTCTTGCC
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TCTGCAAGCATCCTACTATGTGGCCATTGAACTGGAATTAATTGAGAGGAGCA
ATACAGACCAAGATTTACAATAAAATTATGCACCTGTCCACCTCCAACCTGTCCA
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15 GCTCATGTGGTTTTTCTTCTTGTGCCCAAACCTCTGGGCTATGCCAGTACAGATCA
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AGGCCCAGCGGACGACACTGGAGTATTCCAATGAGCGGCTGAAGCAGACCAACG
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20 CACGCGGGTGGAGACGACCCGCAGGAAGGAGATGACCAGCCTCAGGGCCTTTCG
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GTCCAGTGTGGTCCGATCTACCGTCAAAGCTCTAGTGAGCGTGCAAAAGCTAAGC
25 GAGTTCCTGTCCAGTGCAGAGATCCGTGAGGAGCAGTGTGCCCCCATGAGCCC
ACACCTCAGGGCCCAGCCAGCAAGTACCAGGCGGTGCCCTCAGGGTTGTGAAC
CGCAAGCGTCCAGCCCGGGAGGATTGTGCGGGGCCTCACCGGCCCACTGCAGAGC
CTGGTCCCCAGTGCAGATGGCGATGCTGACAACCTGCTGTGTCCAGATCATGGGAG
GCTACTTCACGTGGACCCCAGATGGAATCCCCACACTGTCCAACATCACCATTCG
30 TATCCCCCGAGGCCAGCTGACTATGATCGTGGGGCAGGTGGGCTGCGGCAAGTC
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AAACCATGGCTGCTAAATGCCACTGTGGAGGAGAACATCATCTTGAGAGTCCCT
35 TCAACAAACAACGGTACAAGATGGTCAATTGAAGCCTGCTCTCTGCAGCCAGACA
TCGACATCCTGCCCCATGGAGACCAGACCCAGATTGGGGAACGGGGCATCAACC
TGCTGTGGTGGTCAACGCCAGCGAATCAGTGTGGCCCGAGCCCTCTACCAGCACGC
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40 TCTTAGTGACCCACAAGCTACAGTACCTGCCCCATGCAGACTGGATCATTGCCAT
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45 AGGAGGCAGCTGAGAGCGAGGAGGATGACAACCTGTCGTCCATGCTGCACCAGC
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GCCAGGAAGTGTCCCTCAGCCAGGAGTGACCCCTCGACCAGACTGTCTATGCCA

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TCCTGAACAGATTTTCATCTGACTGTAACACCATCGACCAGCACATCCCATCCAC
5 GCTGGAGTGCCTGAGCCGCTCCACCCTGCTCTGTGTCTCAGCCCTGGCCGTCATC
TCCTATGTCACACCTGTGTTCCCTCGTGGCCCTCTTGCCCCCTGGCCATCGTGTGCTA
CTTCATCCAGAAGTACTTCCGGGTGGCGTCCAGGGACCTGCAGCAGCTGGATGAC
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CCATCCGGGCGCTTCAGGTATGAGGCCCGGTTCCAGCAGAAGCTTCTCGAATACAC
10 AGACTCCAACAACATTGCTTCCCTCTTCCTCACAGCTGCCAACAGATGGCTGGAA
GTCCGAATGGAGTACATCGGTGCATGTGTGGTGTCTATCGCAGCGGTGACCTCCA
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CTACGCCCTAATGGTCTCCAACCTACCTCAACTGGATGGTGAGGAACCTGGCAGAC
ATGGAGCTCCAGCTGGGGGCTGTGAAGCGCATCCATGGGCTCCTGAAAACCGAG
15 GCAGAGAGCTACGAGGGGACTCCTGGCACCATCGCTGATCCCAAAGAAGTGGCCA
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ATCTGCGGCCGACCCGGCAGTGGGAAGTCCTCCTTCTCTTGCCTTCTTCCGCAT
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20 GCCGCTGCACACCCTGCGCTCACGCTCTCCATCATCCTGCAGGACCCCGTCCTC
TTCAGCGGCACCATCCGATTAACTGACCCTGAGAGGAAGTGCTCAGATAGC
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CCAGGAGGCCTCGATGCCATCATCACAGAAGGCGGGGAGAATTCAGCCAGGGA
CAGAGGCAGCTGTTCTGCCTGGCCCGGGCCTTCGTGAGGAAGACCAGCATCTTCA
25 TCATGGACGAGGCCACGGCTTCCATTGACATGGCCACGGAAAACATCTCCAAA
AGGTGGTGATGACAGCCTTCGCAGACCGCACTGTGGTCACCATCGCGCATCGAGT
GCACACCATCCTGAGTGCAGACCTGGTGATCGTCCTGAAGCGGGGTGCCATCCTT
GAGTTCGATAAGCCAGAGAAGCTGCTCAGCCGGAAGGACAGCGTCTTCGCCTCC
TTCGTCCGTGCAGACAAGTGACCTGCCAGAGCCCAAGTGCCATCCACATTTCGGA
30 CCCTGCCCATACCCCTGCCTGGGTTTTCTAACTGTAAATCACTTGTAATAAATA
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SEQ ID NO: 260

>2211267F6

35 GAAAGAAACAGATAACACCAAACCAAACCCCGTAGCTCCATATTGGACATCCCC
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CAAAGAATTCAAACCTGACCACAGAATTGGAGGCTACAAGGTCCGTTATGCCAC
CTGGAGCATCATAATGGACTCTGTGGTGGCCTCTGACAAGGGCAACTACACCTGC
40 ATTGTTGGAGAATGAGTACGGCAGCATCAACCACACATACCAGCTGGATGTCGTG
GAGCGGTCCCCTCACCGGCCCATCCTGCAAGCAGGGTTGCCCGCCAAACAAAACA
GTGGCCTGGGTAGCAACGTGGAGTTCATGTGTAAGGTGTACAGTGACCCGCAGC
CGCACATCCAGTGGCTAAAGCACATCGAGGTGAATGGGAGCAAGATTGGCCCAG
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45

SEQ ID NO: 261

>gi|186287|gb|M54933.1|HUMIL1C Human monocyte interleukin mRNA, complete cds

GACAAACCTTTTCGAGGCAAAAGGCAAAAAAGGCTGCTCTGGGATTCTCTTCAG
CCAATCTTCAATGCTCAAGTGTCTGAAGCAGCCATGGCAGAAGTACCTAAGCTCG

CCAGTGAAATGATGGCTTATTACAGTGGCAATGAGCATGACTTGTTCTTTGAAGC
 TGATGGCCCTAAACAGATGAAGTGCTCCTTCCAGGACCTGGACCTCTGCCCTCTG
 GATGGCGGCATCCAGCTACGAATCTCCGACCACCACTACAGCAAGGGCTTCAGG
 CAGGCCGCGTCAGTTGTTGTGGCCATGGACAAGCTGAGGAAGATGCTGGTTCCCT
 5 GCCCACAGACCTTCCAGGAGAATGACCTGAGCACCTTCTTCCCTTCATCTTTGA
 AGAAGAACCTATCTTCTTCGACACATGGGATAACCAGGCTTATGTGCACGATGCA
 CCTGTACGATCACTGAACTGCACGCTCCGGGACTCACAGCAAAAAAGCTTGGTG
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 AACAAGTGGTGTCTCCATGTCTTTGTACAAGGAGAAGAAAGTAATGACAAAA
 10 TACCTGTGGCCTTGGCCCTCAAGGAAAAGAATCTGTACCTGTCTGCGTGTGAA
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 GGAATTTGAGTCTGCCAGTTCCCCAACTGGTACATCAGCACCTCTCAAGCAGAA
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 15 ACCATGCAATTTGTGTCTTCTTAAAGAGAGCTGTACCCAGAGAGTCCTGTGCTGA
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 CGGCTATAGCCTGGACTTTTCTGTGTCTACACCAATGCCCAACTGCCTGCCTTAG
 GGTAGTGCTAAGAGGATCTCCTGTCCATCAGCCAGGACAGTCAGCTCTCTCCTTT
 CAGGCCAATCCCAGCCCTTTTGTGAGCCAGGCCTCTCTCACCTCTCCTACTCACT
 20 TAAAGCCCGCCTCACAGAAACCAGGCCACATTTTGGTTCTAAGAAACCCTCCTCT
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 TTGTTTGTTTTGATTCAATTTGTTCTAATTTATTCAAAGGGGGCAAGAAGTAGCAGT
 GTCTGTAAAAGAGCCTAGTTTTTAATAGCTATGGAATCAATTCAATTTGGACTGG
 TGTGCTCTCTTTAAATCAAGTCCTTTAATTAAGACTGAAAATATATAAGCTCAGA
 25 TTATTTAAATGGGAATATTTATAAATGAGCAAATATCATACTGTTCAATGGTTCT
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SEQ ID NO: 262

>gi|2056756|gb|AA402960.1|AA402960 zu54d12.s1 Soares ovary tumor NbHOT Homo
 sapiens cDNA clone IMAGE:741815 3', mRNA sequence
 30 TTTTTTTTTTTATATTTACCTTTTTTATTGAATTTGTATTAAAGGAGGTAGTGAG
 GGGGCGGAACGACTTAAGAGTCAGAATCCATATTAGACTCTGGGGAGTGAAAAA
 TTAAATTAAATCAGTAAGATGGGGAGTGGGGGAAGAGTCAGAGGGAACTTTGCC
 CACCTTTGAAGATCAAATCAAGAAATCAGGGAAAGCAAAGACTTAGGAGAGGA
 35 GAAAGACATTCTCTCAATCCATCCTCCTTCCCCAGGGCAGAGAATTAAACAACGT
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SEQ ID NO: 263

>gi|285960|dbj|D14695.1|HUMORF12 Human mRNA for KIAA0025 gene, complete cds
 40 CGTGAACGGTCGTTGCAGAGATTGCGGGCGGCTGAGACGCCGCCTGCCTGGCAC
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 TTGGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCAAGGCCACCTG
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 45 GGAAGCTGTTGTTGGATCACCAATGTCTCAGGGACTTGCTTCCAAAGCAGGAAA
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5 GCCTGCCAATCAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAA
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TATCCTCTACTTCTACTCCTCCCTGAGCAGATTCCCTCATGGTCATGGGGGCCACCG
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10 GAACTTCCCAAATGATGGTCCTCCTCCTGACGTTGTAAATCAGGACCCCAACAAT
AACTTACAGGAAGGCACTGATCCTGAAACTGAAGACCCCAACCACCTCCCTCCA
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15 GGATCACCTGACTCCAGCTAGATTGCCTCTCCTGGACATGGCAATGATGAGTTTT
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TGAAGCCGTGATACAAATTGGTGAACAAAAAATGCCCAAGGCTTCTCATGTGTTT
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20 CATGTGTGTTTGTACATAGAAGTCATAGATGCAGAAAGTGGTTCTGCTGGTAAGAT
TTGATTCCCTGTTGGAATGTTTAAATTACACTAAGTGTACTACTTTATATAATCAAT
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AACCTTTGCTGGGTTTCTGTTCAATAAAGTTTTACTATGAATGACCCTG
25

SEQ ID NO: 264

>gi|1004270|emb|X87159.1|HSSCNN1B H.sapiens mRNA for beta subunit of epithelial
amiloride-sensitive sodium channel

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30 ACCGCCGCCTCCGCCACCGCCGACAGCGCGCATCCTCCGTGTCCCCGCTCCGCCG
CCCGAGCAGGTGCCACTATGCACGTGAAGAAGTACCTGCTGAAGGGCCTGCATC
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35 GGCATCTTCATCAGGACCTACTTGAGCTGGGAGGTCAGCGTCTCCCTCTCCGTAG
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40 ACCACCCCATGGTCCTTGATCTCTTTGGAGACAACCACAATGGCTTAACAAGCAG
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CTATGGCAACTGTTACATCTTCAACTGGGGCATGACAGAGAAGGCACTTCCTTCG
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10 CACCATTGAAGAATCAGCAGCCAATAACATCGTCTGGCTGCTCTCGAATCTGGGT
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15 CGCAGCCCCAACACTGGGCCCTACCCAGTGAGCAGGCCCTGCCCATCCCAGGC
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CAAAGGGTCGGGAGGGTAGCTCTCAGGCCAGAGCTTGTGTCCTTCAACAGAGA
20 GGCCAGCGGCAACTGGTCCGTTACTGGCCAAGGGCTCTGAAGAATCAACGGTGC
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ACCTGTCCTGATCCTGGTCCCTGAAGACCCCTCGGAACACCCTCTCCTGGTGGCAG
GCCACTTCCCTCCCAGTGCCAGTCTCCATCCACCCAGAGAGGAACAGGGGGGTG
GGCCATGTGGTTTCTCCTTCCCTGGCCTTGGCTGGCCTCTGGGGCAGGGGTGGTG
25 GAGAGATGGAAGGGCATCAGGTGTAGGGACCCTGCCAAGTGGCACCTGATTTAC
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SEQ ID NO: 265

>gi|1408187|gb|U59167.1|HSU59167 Human desmin mRNA, complete cds

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35 CCTGGGGTCGCTGCGGGCCAGCCGGCTGGGGACCACCCGCACGCCCTCCTCCTAC
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GCCAACTACATCGAGAAGGTGCGCTTCTTGAGCAGCAGAACGCGCTCGCCGCC
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40 GAGGAGCTGCGGGAGCTGCGGCGCCAGGTGGAGGTGCTACTAACCAGCGCGCG
CGCGTCGACGTCGAGCGCGACAACCTGCTCGACGACCTGCAGCGGCTCAAGGCC
AAGCTGCAGGAGGAGATTCAAGTTGAAGGAAGAAGCAGAGACAATTTGGCTGCC
TTCCGAGCGGACGTGGATGCAGCTACTCTAGCTCGCATTGACCTGGAGCGCAGA
ATTGAATCTCTCAACGAGGAGATCGCGTTCTTAAGAAAGTGCATGAAGAGGAG
45 ATCCGTGAGTTGCAGGCTCAGCTTCAGGAACAGCAGGTCCAGGTGGAGATGGAC
ATGTCTAAGCCAGACCTCACTGCCGCCCTCAGGGATATCCGGGCTCAGTATGAGA
CCATCGCGGCTAAGAACATTTCTGAAGCTGAGGAGTGGTACAAGTCGAAGGTGT
CAGACCTGACCCAGGCAGCCAACAAGAACAACGACGCCCTGCGCCAGGCCAAGC
AGGAGATGATGGAATACCGACACCAGATCCAGTCTACACCTGCGAGATTGACG

CCCTCAAGGGCACTAACGATTCCCTGATGAGGCAGATGCGGGAATTGGAGGACC
GATTTGCCAGTGAGGCCAGTGGCTACCAGGACAACATTGCGCGCCTGGAGGAAG
AAATCCGGCACCTCAAGGATGAGATGGCCCGCCATCTGCGCGAGTACCAGGACC
TGCTCAACGTGAAGATGGCCCTGGATGTGGAGATTGCCACCTACCGGAAGCTGCT
5 GGAGGGAGAGGAGAGCCGGATCAATCTCCCCATCCAGACCTACTCTGCCCTCAA
CTTCCGAGAAACCAGCCCTGAGCAAAGGGGTCTGAGGTCCATACCAAGAAGAC
GGTGATGATCAAGACCATCGAGACACGGGATGGGGAGGTTCGTCAGTGAGGCGAC
ACAGCAGCAGCATGAAGTGCTCTAAAGACGAGAGACCCTCTGCCACCAGAGACC
GTCCTCACCCCTGTCTCACTGCTCCCTGAAGCCCAGCCTTCTTCCATCCCAGGAC
10 ACCACACCCAGCCTCAGTCCTCCCGTCACAGCCTCTGACCCCTCCTCACTGGCCA
TCCCTCGTGGTCCCCAACAGCGACATAGCCCATCCCTGCCTGGTCACAGGCATGC
CCCGGCCACCTCTGCGGACCCCAAGCTGTGAGCCTTGGCTGTTGGCAGTGAGTGAG
CCTGGCTCTTGTGCTGGATGGAGCCCAGGCGGGAGCGGTGGCCCTGTCCCTCCCA
CCTCTGTGACCTGAGGCCTACGCTTTGGCTCTGGAGATAGCCCCAGAGCAGGGTG
15 TTGGGATACTGCAGGGCCAGGACTGAGCCCCGCAGACCTCCCCAGCCCCTAGCC
CAGGAGAGAGAAAGCCAGGCAGGTAGCCTGGGGGACTAGCCCTGTGGAGACTG
GGGGGCTTGAAATTGTCCCCGTGGTCTCTTACTTTCTTTCCCCAGCCCAGGGTGG
ACTTAGAAAGCAGGGGGCTACAAGAGGGGAATCCCCGAAGGTGCTGGAGGTGGGA
GCAGGAGATTGAGAAGGAGAGAAAGTGGGTGAGATGCTGGAGAAGAGAGAGGA
20 GGAGAGAGGCAGAGAGCGGTCTGAGGCTGGTGGGAGGGGCGCCACCTCCCCAC
GCCCTCCCCCCCCCTGCTGCAGGGGCTCTGGAGAGAAACAATAAA

SEQ ID NO: 266

>1649377H1

25 GCCCAGTTAAATAACATTGACAGACTTGCCAACACGATCACAATGATCGAAGAG
GAGATGGTGCAGCTTCGCAAAGATACGAAAAAGCTGTTTCAGCATCGAAATGAA
AGGTAAAAACCAGCCTCTGCCTCTGAATTTGACCATAGTGGCGTTCAGCTGATAG
AGCGGGAAGAAGAAATATGCATTTTTTATGAAAAAATAAATATCCAAGAGAAGA
TGAAACTAAAT

30

SEQ ID NO: 267

>gi|347522|gb|L22206.1|HUMV2R Human vasopressin receptor V2 gene, complete cds

35 AGAAGATCCTGGGTCTGTGCATCCGTCTGTCTGACCATCCCTCTCAATCTTCCCT
GCCCAGGACTGGCCATACTGCCACCGCACACGIGCACACACGCCAACAGGCATC
TGCCATGCTGGCATCTCTATAAGGGCTCCAGTCCAGAGACCCTGGGCCATTGAAC
TTGCTCCTCAGGCAGAGGCTGAGTCCGCACATCACCTCCAGGCCCTCAGAACACC
TGCCCCAGCCCCACCATGCTCATGGCGTCCACCACTTCCGGTAAGGCTTGCCCT
CCATGAGTCCGGTGGGCAGAGTGGGTTTGACGATTGAGGGAAGCCCTCTTTCTA
AAGACCTCCTTCACCTCACCTCTGGGTGTGTCTCTCCAGGCTGCCAATGAGTGG
40 GGAGGGGAGCACAGCCCCACTTCCCCGCCAGGGCTGGGGCTGGGGCTGGGGCTG
GGCTTTCTTGAGTCCCCTCTGCTAGGAGCCAGGAAGTGGGTGTCCGGATGGGG
GCACGGGAGGCAGGCCTGAGTCCCCCTGCACAGCACCTCTCTAACCAGGCCCTC
TTCCCGACTCCTGCCCAGCTGTGCCTGGGCATCCCTCTCTGCCAGCCTGCCAGC
45 AACAGCAGCCAGGAGAGGCCACTGGACACCCGGGACCCGCTGCTAGCCCGGGCG
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TGCTGGCGGCCCTAGCTCGGCGGGGCGGGCGGGGCCACTGGGCACCCATACACG
TCTTCATTGGCCACTTGTGCCTGGCCGACCTGGCCGTGGCTCTGTTCCAAGTGCTG
CCCCAGCTGGCCTGGAAGGCCACCGACCGCTTCCGTGGGCCAGATGCCCTGTGTC

GGGCCGTGAAGTATCTGCAGATGGTGGGCATGTATGCCTCCTCCTACATGATCCT
GGCCATGACGCTGGACCGCCACCGTGCCATCTGCCGTCCCATGCTGGCGTACCGC
CATGGAAGTGGGGCTCACTGGAACCGGCCGGTGCTAGTGGCTTGGGCCTTCTCGC
5 TCCTTCTCAGCCTGCCCCAGCTCTTCATCTTCGCCCAGCGCAACGTGGAAGGTGG
CAGCGGGGTCACTGACTGCTGGGCCTGCTTTGCGGAGCCCTGGGGCCGTTCGCACC
TATGTCACCTGGATTGCCCTGATGGTGTTCGTGGCACCTACCCTGGGTATCGCCG
CCTGCCAGGTGCTCATCTTCCGGGAGATTCATGCCAGTCTGGTGCCAGGGCCATC
AGAGAGGCCTGGGGGGCGCCGACGGGGACGCCGGACAGGCAGCCCCGGTGAGG
GAGCCACGTGTCAGCAGCTGTGGCCAAGACTGTGAGGATGACGCTAGTGATTG
10 TGGTCGTCTATGTGCTGTGCTGGGCACCTTCTTCCTGGTGCAGCTGTGGGCCGC
GTGGGACCCGGAGGCACCTCTGGAAGGTGGGTGTAGCCGTGGCTAGGGCTGACG
GGGCCACTTGGGCTTGGCCGCATGCCCTGTGCCCCACCAGCCATCCTGAACCCA
ACCTAGATCCTCCACCTCCACAGGGGGCGCCCTTTGTGCTACTCATGTTGCTGGCC
AGCCTCAACAGCTGCACCAACCCCTGGATCTATGCATCTTTCAGCAGCAGCGTGT
15 CCTCAGAGCTGCGAAGCTTGCTCTGCTGTGCCCGGGGACGCACCCACCCAGCCT
GGGTCCCCAAGATGAGTCCTGCACCACCGCCAGCTCCTCCCTGGCCAAGGACACT
TCATCGTGAGGAGCTGTTGGGTGTCTTGCTCTAGAGGCTTTGAGAAGCTCAGCT
GCCTTCCTGGGGCTGGTCCTGGGAGCCACTGGGAGGGGGACCCGTGGAGAATTG
GCCAGAGCCTGTGGCCCCGAGGCTGGGACACTGTGTGGCCCTGGACAAGCCACA
20 GCCCCTGCCTGGGTCTCCACATCCCCAGCTGTATGAGGAGAGCTTCAGGCCCCAG
GACTGTGGGGGGCCCCCTCAGGTCAGCTCACTGAGCTGGGTGTAGGAGGGGCTGCA
GCAGAGGCCTGAGGAGTGGCAGGAAAGAGGGAGCAGGTGCCCCCAGGTGAGAC
AGCGGTCCCAGGGGCTGAAAAGGAAGGACCAGGCTGGGGCCAGGGGACCTTTC
TGCTCTCCGCCTTCTAATCCCTCCCTCCTCATTCTCTCCCTAATAAAAATTGGAGC
25 TCATTTTCCACATGGCAAGGGGTCTCCTTGATCCTCT

SEQ ID NO: 268

>gi|28720|emb|X06989.1|HSAPA4R Human mRNA for amyloid A4(751) protein

GAATTCCCGCGGAGCAGCGTGCGCGGGGCCCCGGGAGACGGCGGGCGGTAGCGGC
30 GCGGGCAGAGCAAGGACGCGCGGATCCCACTCGCACAGCAGCGCACTCGGTGC
CCCGCGCAGGGTTCGCGATGCTGCCCGGTTTGGCACTGCTCCTGCTGGCCGCCTGG
ACGGCTCGGGCGCTGGAGGTACCCACTGATGGTAATGCTGGCCTGCTGGCTGAA
CCCCAGATTGCCATGTTCTGTGGCAGACTGAACATGCACATGAATGTCCAGAATG
GGAAGTGGGATTTCAGATCCATCAGGGACCAAAACCTGCATTGATACCAAGGAAG
35 GCATCCTGCAGTATTGCCAAGAAGTCTACCCTGAACTGCAGATCACCAATGTGGT
AGAAGCCAACCAACCAGTGACCATCCAGAACTGGTGCAAGCGGGGCCGCAAGCA
GTGCAAGACCCATCCCCACTTTGTGATTCCCTACCGCTGCTTAGTTGGTGAGTTTG
TAAGTGATGCCCTTCTCGTTCCTGACAAGTGCAAATTCTTACACCAGGAGAGGAT
GGATGTTTGCGAACTCATCTTCACTGGCACACCGTCGCCAAAGAGACATGCAGT
40 GAGAAGAGTACCAACTTGCATGACTACGGCATGTTGCTGCCCTGCGGAATTGAC
AAGTTCCGAGGGGTAGAGTTTGTGTGTTGCCCACTGGCTGAAGAAAGTGACAAT
GTGGATTCTGCTGATGCGGAGGAGGATGACTCGGATGTCTGGTGGGGCGGAGCA
GACACAGACTATGCAGATGGGAGTGAAGACAAAGTAGTAGAAGTAGCAGAGGA
GGAAGAAGTGGCTGAGGTGGAAGAAGAAGAAGCCGATGATGACGAGGACGATG
45 AGGATGGTGATGAGGTAGAGGAAGAGGCTGAGGAACCCTACGAAGAAGCCACA
GAGAGAACCACCAGCATTGCCACCACCACCACCACCACAGAGTCTGTGGAA
GAGGTGGTTCGAGAGGTGTGCTCTGAACAAGCCGAGACGGGGCCGTGCCGAGCA
ATGATCTCCCGCTGGTACTTTGATGTGACTGAAGGGAAGTGTGCCCCATTCTTTT
ACGGCGGATGTGGCGGCAACCGGAACAACCTTTGACACAGAAGAGTACTGCATGG

CCGTGTGTGGCAGCGCCATTCCTACAACAGCAGCCAGTACCCCTGATGCCGTTGA
CAAGTATCTCGAGACACCTGGGGATGAGAATGAACATGCCCATTTCCAGAAAGC
CAAAGAGAGGCTTGAGGCCAAGCACCGAGAGAGAATGTCCCAGGTCATGAGAG
AATGGGAAGAGGCAGAACGTCAAGCAAAGAAGTTCCTAAAGCTGATAAGAAG
5 GCAGTTATCCAGCATTTCCAGGAGAAAGTGGAATCTTTGGAACAGGAAGCAGCC
AACGAGAGACAGCAGCTGGTGGAGACACACATGGCCAGAGTGGAAGCCATGCTC
AATGACCGCCGCCGCTGGCCCTGGAGAACTACATCACCGCTCTGCAGGCTGTTC
CTCCTCGGCCTCGTCACGTGTTCAATATGCTAAAGAAGTATGTCCGCGCAGAACA
GAAGGACAGACAGCACACCCCTAAAGCATTTCGAGCATGTGCGCATGGTGGATCC
10 CAAGAAAGCCGCTCAGATCCGGTCCCAGGTTATGACACACCTCCGTGTGATTTAT
GAGCGCATGAATCAGTCTCTCTCCCTGCTCTACAACGTGCCTGCAGTGGCCGAGG
AGATTCAGGATGAAGTTGATGAGCTGCTTCAGAAAGAGCAAACTATTTCAGATG
ACGTCTTGCCCAACATGATTAGTGAACCAAGGATCAGTTACGGAAACGATGCTCT
CATGCCATCTTTGACCGAAACGAAAACCAACCGTGGAGCTCCTTCCCGTGAATGGA
15 GAGTTCAGCCTGGACGATCTCCAGCCGTGGCATTCTTTTGGGGCTGACTCTGTGC
CAGCCAACACAGAAAACGAAGTTGAGCCTGTTGATGCCCCGCCCTGCTGCCGACC
GAGGACTGACCACTCGACCAGGTTCTGGGTTGACAAATATCAAGACGGAGGAGA
TCTCTGAAGTGAAGATGGATGCAGAATTCGACATGACTCAGGATATGAAGTTC
ATCATCAAAAATTGGTGTCTTTTGCGAGAAGATGTGGGTTCAAACAAAGGTGCAAT
20 CATTGGACTCATGGTGGGCGGTGTTGTCATAGCGACAGTGATCGTCATCACCTTG
GTGATGCTGAAGAAGAAACAGTACACATCCATTTCATCATGGTGTGGTGGAGGTT
GACGCGCTGTCACCCCAGAGGAGCGCCACCTGTCCAAGATGCAGCAGAACGGC
TACGAAAATCCAACCTACAAGTTCTTTGAGCAGATGCAGAACTAGACCCCGCC
ACAGCAGCCTCTGAAGTTGGACAGCAAAACCAATTGCTTCACTACCEATCGGTGTC
25 CATTTATAGAATAATGTGGGAAGAAACAAACCCGTTTTATGATTTACTCATTATC
GCCTTTTGACAGCTGTGCTGTAACACAAGTAGATGCCTGAACTTGAATTAATCCA
CACATCAGTAATGTATTCTATCTCTCTTTACATTTTGGTCTCTATACTACATTATTA
ATGGGTTTTGTGTACTGTAAAGAATTTAGCTGTATCAAACCTAGTGCATGAATAGA
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30 GTTTGTGACCCAATTAAGTCCTACTTTACATATGCTTTAAGAATCGATGGGGGAT
GCTTCATGTGAACGTGGGAGTTCAGCTGCTTCTCTTGCCTAAGTATTCCTTTCCTG
ATCACTATGCATTTTAAAGTTAAACATTTTAAAGTATTCAGATGCTTTAGAGAG
ATTTTTTTTCCATGACTGCATTTTACTGTACAGATTGCTGCTTCTGCTATATTTGTG
ATATAGGAATTAAGAGGATACACACGTTTGTCTTCTGCTGCTGTTTTATGTGCAC
35 ACATTAGGCATTGAGACTTCAAGCTTTTCTTTTTTTGTCCACGTATCTTTGGGTCT
TTGATAAAGAAAAGAATCCCTGTTTATTGTAAGCACTTTTACGGGGCGGGTGGGG
AGGGGTGCTCTGCTGGTCTTCAATTACCAAGAATTC

SEQ ID NO: 269

40 >3107995H1
TAAACATCCCAAAACTGGAGTTTTTCGAAGAGAAACATGCCAAACCTCCAGATGT
AGACCT
TAAAAAGTTCTTTACAGACAGGAAGACTCATCTTTATACCCTTGTGATGAATCCA
GATGA
45 CACATTTGAGGTGTTAGTTGATCAAACAGTTGTAAACAAAGGAAGCCTCCTAGA
GGATGT
GGTTCCTCCTATCAAACCTCC

SEQ ID NO: 270

>gi|179579|gb|M17017.1|HUMBTLP Human beta-thromboglobulin-like protein mRNA,
complete cds

5 ACAAACCTTTCAGAGACAGCAGAGCACACAAGCTTCTAGGACAAGAGCCAGGAAG
AAACCACCGGAAGGAACCATCTCACTGTGTGTAAACATGACTTCCAAGCTGGCC
GTGGCTCTCTTGGCAGCCTTCCTGATTTCTGCAGCTCTGTGTGAAGGTGCAGTTTT
GCCAAGGAGTGCTAAAGAACTTAGATGTCAGTGCATAAAGACATACTCCAAACC
TTTCCACCCCAAATTTATCAAAGAACTGAGAGTGATTGAGAGTGGACCACACTGC
10 GCCAACACAGAAATTATTGTAAAGCTTTCTGATGGAAGAGAGCTCTGTCTGGACC
CCAAGGAAAACCTGGGTGCAGAGGGTTGTGGAGAAGTTTTTGAAGAGGGCTGAGA
ATTCATAAAAAAATTCATTCTCTGTGGTATCCAAGAATCAGTGAAGATGCCAGTG
AACTTCAAGCAAATCTACTTCAACACTTCATGTATTGTGTGGGTCTGTTGTAGG
GTTGCCAGATGCAATACAAGATTCTGGTTAAATTTGAATTTTCAGTAAACAATGA
ATAGTTTTTTCATTGTACCATGAAATATCCAGAACATACTTATATGTAAAGTATTAT
15 TTATTTGAATCTACAAAAACAACAAATAATTTTTGAATATAAGGATTTTCCTAG
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ATCCGAACCTTAAATTTACAGGAATTGAATGGGTTTGCTAGAATGTGATATTTGAAG
CATCACATAAAAAATGATGGGACAATAAATTTTGCCATAAAGTCAAATTTAGCTGG
AAATCCTGGATTTTTTTTCTGTAAATCTGGCAACCCTAGTCTGCTAGCCAGGATCC
20 ACAAGTCCTTGTTCCACTGTGCCTTGGTTTCTCCTTTATTTCTAAGTGGAAAAAGT
ATTAGCCACCATCTTACCTCACAGTGATGTTGTGAGGACATGTGGAAGCACTTTA
AGTTTTTTCATCATAACATAAATTATTTTCAAGTGTAACCTATTAACCTATTTATT
ATTTATGTATTTATTTAAGCATCAAATATTTGTGCAAGAATTTGGAAAAATAGAA
GATGAATCATTGATTGAATAGTTATAAAGATGTTATAGTAAATTTATTTTATTTTA
25 GATATTAAATGATGTTTTATTAGATAAATTTCAATCAGGGTTTTTAGATTAAACA
AACAAACAATTGGGTACCCAGTTAAATTTTCATTTTCAGATAAACAACAATAATT
TTTTAGTATAAGTACATTATTGTTTATCTGAAATTTTAATTGAACTAACAATCCTA
GTTTGATACTCCCAGTCTTGTCATTGCCAGCTGTGTTGGTAGTGCTGTGTTGAATT
ACGGAATAATGAGTTAGAACTATTAACAGCCAAAACCTCCACAGTCAATATTA
30 GTAATTTCTTGCTGGTTGAACTTGTTTATTATGTACAAATAGATTCTTATAATAT
TATTTAAATGACTGCATTTTAAATACAAGGCTTTATATTTTAACTTTAAGATGT
TTTTATGTGCTCTCCAAATTTTTTTTACTGTTTCTGATTGTATGGAAATATAAAAG
TAAATATGAAACATTTAAATATAATTTGTGTGTCAAAGT

35 SEQ ID NO: 271

>gi|521214|gb|L33404.1|HUMSERPROT Human stratum corneum chymotryptic enzyme
mRNA, complete cds

GGATTTCCGGGCTCCATGGCAAGATCCCTTCTCCTGCCCTGCAGATCCTACTGCT
ATCCTTAGCCTTGGAACCTGCAGGAGAAGAAGCCAGGGTGACAAGATTATTGA
40 TGGCGCCCCATGTGCAAGAGGCTCCCACCCATGGCAGGTGGCCCTGCTCAGTGGC
AATCAGCTCCACTGCGGAGGCGTCCTGGTCAATGAGCGCTGGGTGCTCACTGCCG
CCCCTGCAAGATGAATGAGTACACCGTGCACCTGGGCAGTGATACGCTGGGCG
ACAGGAGAGCTCAGAGGATCAAGGCCTCGAAGTCATTCCGCCACCCCGGCTACT
CCACACAGACCCATGTTAATGACCTCATGCTCGTGAAGCTCAATAGCCAGGCCAG
45 GCTGTCATCCATGGTGAAGAAAGTCAGGCTGCCCTCCCGCTGCGAACCCCTGGA
ACCACCTGTACTGTCTCCGGCTGGGGCACTACCACGAGCCCAGATGTGACCTTTC
CCTCTGACCTCATGTGCGTGGATGTCAAGCTCATCTCCCCCAGGACTGCACGAA
GGTTTACAAGGACTTACTGGAAAATTCATGCTGTGCGCTGGCATCCCCGACTCC
AAGAAAAACGCCTGCAATGGTGACTCAGGGGGACCGTTGGTGTGCAGAGGTACC

CTGCAAGGTCTGGTGTCTCTGGGGAACCTTCCCTTGCGGCCAACCCAATGACCCAG
GAGTCTACACTCAAGTGTGCAAGTTCACCAAGTGGATAAATGACACCATGAAAA
AGCATCGCTAACGCCCACTGAGTTAATTAAGTGTGTGCTTCCAACAGAAAATGC
ACAGGAGTGAGGACGCCGATGACCTATGAAGTCAAATTTGACTTTACCTTTCCTC
5 AAAGATATATTTAAACCTCATGCCCTGTTGATAAACCAATCAAATTGGTAAAGAC
CTAAAACCAAAACAAATAAAGAAACACAAAACCCTCAA

SEQ ID NO: 272

>2726949H1

10 GTAAAACGGTGGTCTCAATGCCCCACTTAGCCTCTGCCTCTGAATTTGACCATAGT
GGCGTTCAGCTGATAGAGCGGGAAGAAGAAATATGCATTTTTTATGAAAAAATA
AATATCCAAGAGAAGATGAAACTAAATGGAGAAATTGAAATACATCTACTGGAA
GAAAAGATCCAATTCCTGAAAATGAAGATTGCTGAGAAGCAAAGACAAATTTGT
GTGACCCAGAAATTACTGCCAGCCAAGAGG

15

SEQ ID NO: 273

>2726952H1

TGGTCTCAATGCCCCACTTAGCCTCTGCCTCTGAATTTGACCATAGTGGCGTTCAGC
TGATAGAGCGGGAAGAAGAAATATGCATTTTTTATGAAAAAATAAATATCCAAG
20 AGAAGATGAAACTAAATGGAGAAATTGAAATACATCTACTGGAAGAAAAGATCC
AATTCCTGAAAATGAAGATTGCTGAGAAGCAAAGACAAATTTGTGTGACCCAGA
CAATTAATGCTGCCAGCCAAGAGGTC

SEQ ID NO: 274

25 >gi|990907|gb|H51066.1|H51066 yp84g12.s1 Soares fetal liver spleen 1NFLS Homo sapiens
cDNA clone IMAGE:194182 3', mRNA sequence
TGAGCAGGTAACACCCAGGNCATTTTGATGAGATCCAAAGGAGTTGTATGCACA
TGAAAGTTTGAGAAGCATCATCATAGAGAAGTAAACATCACACCCAACCTCCTTA
TCTTTCAGTGGCTAAACCACTTAACCTCTCTGGGTGTTACCTGCTCATTGTGTTA
30 AAAAAAAAAAAAAAAAAAGTCTCACCTGCTTTCATGCTGAGGNCAAGTTCAGATGTT
CAAGCCTATAATATTTNNGCAGTTCNCAAATTTATGAAAAGNGTTCTCAGAATT
GGGGAGACAGTCAAAGGGTNCAAAGCCTCAGTTAGGGGGGNTAAGTGTGATTTT
TTTTTAAAGNTCACTTGCACAGCCTGGCTAAATTTAGGGGTAATTGGAATGTATA
TTTNCAA

35

SEQ ID NO: 275

>gi|2159230|gb|AA446565.1|AA446565 zw84b11.s1 Soares_total_fetus_Nb2HF8_9w Homo
sapiens cDNA clone IMAGE:783645 3', mRNA sequence

TTTTTCAAATATATACATTTTAAATATTTGAAATATTTACATAATGGAACCACAT
40 CAGGGTTCGAGGGTAAGAACAGTGTTCATCAAATGTCCTCTCCAGGTGTGTTAAA
AAAAAAAAAAATCCAGTAATCCAAAGCTCACATTATGCTTTTTCTAACAGGCCAA
TCTTTACCTTTCTTTTAAATAAGTACTCAGACATGGGAACAGTTGCATCTAATTTG
TGTGAAAAGCTGTTTAAACCTTCTTACGTTTTTCAGGTAATTTTACTCCCTGGTGAA
ATTCTGATCTACAACGAAGAAAGCCCCAGGAATTTCTCTAAGCACATCATCAGTA
45 CATTTTAAACACTAATGAGCCAAGGTAAACAAGATATAAACCTTCTACAAGA
CAAAAATGAAAACAAATGGTTAGTGGTTGGTAACTGCCTTGAA

SEQ ID NO: 276

>gi|749387|gb|T99650.1|T99650 ye73h09.s1 Soares fetal liver spleen 1NFLS Homo sapiens
cDNA clone IMAGE:123425 3', mRNA sequence

5 CAATAAAATGATTTATTTTATATATGCAAAATCAAAATCTCTTTGTACACTTTAAT
TTTTGCAAATTCATACAAACATAACAATACTGCTCCATATAAACTTTTGTATAAA
CATTAAAGGAAATATACACATATTTNGTTCTTCTTGTGCTTCCAAAGCACAGAAT
GTATAAGTCCATCTGAAGACTTTCTATCATCACATGCAAGAACAAATGTCAGAGG
TTGGGGGCGAGCCTCAAGTGCACCTTTGTAATGTCTCTAGACAAAAGAGAAGAGAG
10 TTGGAGGTAGGATTGTTTGGGTGACTCTCCCTGCCCCTTCCCACAGAGGAAATAA
GGTTACCCCAAATAGGCAGCTTCTTACTTCTTTGGATTCAAACCTATCCTGGANTAT
TGCATGGGTTTTAAAAGGGCNCACAAC

SEQ ID NO: 277

>463614H1

15 GCTTTGGTCTATGACCTCTGATATCTACTTTGATAATTTTATTATCTGTTTCGAAAA
AGGAAGTAGCAGATCACTGGGCTGCAGATGGTTGGAGATGGAAAATAATGATAG
CAAATGCTAATAAGCCTGGTGTATTAAAACAGTTAATGGCAGCTGCTGAAGGGC
ACCCATGGCTTTGGTTGATTATCTTGTGACAGCAGGAGTGCCAATAGCATTAAT
TACTTCATTTTGT

20

SEQ ID NO: 278

>gi|31298|emb|Y00318.1|HSFAC1 Human mRNA for complement control protein factor I

GAGAGACAAAGACCCCGAACACCTCCAACATGAAGCTTCTTCATGTTTTCTGT
ATTTCTGTGCTTCCACTTAAGGTTTTGCAAGGTCACCTTATACATCTCAAGAGGATC
25 TGGTGGAGAAAAAGTGCTTAGCAAAAAAATATACTCACCTCTCCTGCGATAAAG
TCTTCTGCCAGCCATGGCAGAGATGCATTGAGGGCACCTGTGTTTGTAAGTACC
GTATCAGTGCCCAAGAATGGCACTGCAGTGTGTGCAACTAACAGGAGAAGCTT
CCCAACATACTGTCAACAAAAGAGTTTGGAAATGTCTTCATCCAGGGACAAAGTTT
TTAAATAACGGAACATGCACAGCCGAAGGAAAGTTTAGTGTTTCCTTGAAGCAT
30 GGAAATACAGATTCAGAGGGAATAGTTGAAGTAAAACCTTGTGGACCAAGATAAG
ACAATGTTTCATATGCAAAAGCAGCTGGAGCATGAGGGAAGCCAACGTGGCCTGC
CTTGACCTTGGGTTTTCAACAAGGTGCTGATACTCAAAGAAGGTTTAAGTTGTCTG
ATCTCTCTATAAATTCCACTGAATGTCTACATGTGCATTGCCGAGGATTAGAGAC
CAGTTTGGCTGAATGTACTTTTACTAAGAGAAGAACTATGGGTTACCAGGATTTCT
35 GCTGATGTGGTTTGTATACACAGAAAGCAGATTCTCCAATGGATGACTTCTTTC
AGTGTGTGAATGGGAAATACATTTCTCAGATGAAAGCCTGTGATGGTATCAATGA
TTGTGGAGACCAAGTGATGAACTGTGTTGTAAAGCATGCCAAGGCAAAGGCTT
CCATTGCAAATCGGGTGTGTTGCATTCCAAGCCAGTATCAATGCAATGGTGAGGTG
GACTGCATTACAGGGGAAGATGAAGTTGGCTGTGCAGGCTTTCATCTGTGGCTC
40 AAGAAGAAACAGAAATTTTGAAGTGTGACATGGATGCAGAAAGAAGACGGATA
AAATCATTATTACCTAACTATCTTGTGGAGTTAAAAACAGAATGCACATTCGAA
GGAAACGAATTGTGGGAGGAAAGCGAGCACAACCTGGGAGACCTCCCATGGCAG
GTGGCAATTAAGGATGCCAGTGAATCACCTGTGGGGGAATTTATATTGGTGGCT
GTTGGATTCTGACTGCTGCACATTGTCTCAGAGCCAGTAAAACCTCATCGTTACCA
45 AATATGGACAACAGTAGTAGACTGGATACACCCCGACCTTAAACGTATAGTAAT
TGAATACGTGGATAGAATTATTTCCATGAAAACCTACAATGCAGGCACTTACCAA
AATGACATCGCTTTGATTGAAATGAAAAAAGACGGAAACAAAAAAGATTGTGAG
CTGCCTCGTTCCATCCCTGCCTGTGTCCCCTGGTCTCCTTACCTATTCCAACCTAA
TGATACATGCATCGTTTCTGGCTGGGGACGAGAAAAAGATAACGAAAGAGTCTT

TTCAC TTCAGTGGGGTGAAGTTAACTAATAAGCAACTGCTCTAAGTTTTACGGA
AATCGTTTCTATGAAAAAGAAATGGAATGTGCAGGTACATATGATGGTTCCATCG
ATGCCTGTAAAGGGGACTCTGGAGGCCCTTAGTCTGTATGGATGCCAACAATGT
GACTTATGTCTGGGGTGTGTGAGTTGGGGGGAAAACTGTGGAAAACCAAGAGTT
5 CCCAGGTGTTTACACCAAAGTGGCCAATTATTTTGACTGGATTAGCTACCATGTA
GGAAGGCCTTTTATTTCTCAGTACAATGTATAAAATTGTGATCTCTCTCTTCATTC
TATTCTTTTTCTCTCAAGAGTTCCATTTAATGGAAATAAAACGGTATAATTAATAA
TTCTCTAGGGGGGAAAAATGAAGCAAATCTCATTGGATATTTTAAAGGTCTCCA
CAGAGTTTATGCCATATTGGAATTTTGTGTATAATTCTCNNGCGAATTC

10 SEQ ID NO: 279

>gi|181244|gb|M64349.1|HUMCYCD1 Human cyclin D (cyclin D1) mRNA, complete cds
GCAGTAGCAGCGAGCAGCAGAGTCCGCACGCTCCGGCGAGGGGCAGAAAGAGCG
CGAGGGAGCGCGGGGCAGCAGAAGCGAGAGCCGAGCGCGGACCCAGCCAGGAC
15 CCACAGCCCTCCCCAGCTGCCAGGAAGAGCCCCAGCCATGGAACACCAGCTCC
TGTGCTGCGAAGTGGAAACCATCCGCCGCGCGTACCCCGATGCCAACCTCCTCAA
CGACCGGGTGCTGCGGGCCATGCTGAAGGCGGAGGAGACCTGCGCGCCCTCGGT
GTCCTACTTCAAATGTGTGCGAGAAGGAGGTCCTGCCGTCCATGCGGAAGATCGTC
GCCACCTGGATGCTGGAGGTCTGCGAGGAACAGAAGTGCAGAGGAGGAGGTCTTC
20 CCGCTGGCCATGAACTACCTGGACCGCTTCTGTGCTGGAGCCCGTGAAAAAGA
GCCGCCTGCAGCTGCTGGGGGCCACTTGCATGTTCTGTGGCCTCTAAGATGAAGGA
GACCATCCCCCTGACGGCCGAGAAGCTGTGCATCTACACCGACGGCTCCATCCGG
CCCGAGGAGCTGCTGCAAATGGAGCTGCTCCTGGTGAACAAGCTCAAGTGGAAC
CTGGCCGCAATGACCCCGCACGATTTCAATTGAACACTTCCTCTCCAAAATGCCAG
25 AGGCGGAGGAGAAACAAACAGATCATCCGCAAACACGCGCAGACCTTCGTTGCCT
CTTGTGCCACAGATGTGAAGTTCATTTCCAATCCGCCCTCCATGGTGGCAGCGGG
GAGCGTGGTGGCCGCAGTGCAAGGCCTGAACCTGAGGAGCCCCAACAACCTTCCT
GTCCTACTACCGCCTCACACGCTTCTCTCCAGAGTGATCAAGTGTGACCCAGAC
TGCCTCCGGGCCTGCCAGGAGCAGATCGAAGCCCTGCTGGAGTCAAGCCTGCGC
30 CAGGCCCAGCAGAACATGGACCCCAAGGCCGCCGAGGAGGAGGAAGAGGAGGA
GGAGGAGGTGGACCTGGCTTGCACACCCACCGACGTGCGGGACGTGGACATCTG
AGGGGCCCAGGCAGGCGGGCGCCACCGCCACCGCAGCGAGGGCGGAGCCGGC
CCCAGGTGCTCCACATGACAGTCCCTCCTCTCCGGAGCATTTTGATAACCAGAAGG
GAAAGCTTCATTCTCCTTGTGTTGGTTGTTTTCCTTTGCTCTTTCCCCCTTCCA
35 TCTCTGACTTAAGCAAAAGAAAAAGATTACCAAAAACCTGTCTTTAAAGAGAG
AGAGAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAA
AAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAA

SEQ ID NO: 280

40 >gi|3004498|gb|U04357.1|HSU04357 Homo sapiens arginine vasopressin receptor type II,
V2 antidiuretic hormone receptor (AVPR2) gene, complete cds
CTTGCTCCTCAGGCAGAGGCTGAGTCCGCACATCACCTCCAGGCCCTCAGAACAC
CTGCCCCAGCCCCACCATGCTCATGGCGTCCACCACTTCCGGTAAGGCTTGCCCC
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45 AAAGACCTCCTTCACCCTCACCTCTGGGTGTGTCTCTCAGGCTGCCAATGAGTG
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 5 TCTTCATTGGCCACTTGTGCCTGGCCGACCTGGCCGTGGCTCTGTTCCAAGTGCTG
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 GGGTCCCCAAGATGAGTCCTGCACCACCGCCAGCTCCTCCCTGGCCAAGGACACT
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 25 GCCAGAGCCTGTGGCCCCGAGGCTGGGACACTGTGTGGCCCTGGACAAGCCACA
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 GACTGTGGGGGGCCCTCAGGTCAGCTCACTGAGCTGGGTGTAGGAGGGGGCTGCA
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 AGCGGTCCAGGGGCTGAAAAGGAAGGACCAGGCTGGGGCCAGGGGACCTTCC
 30 TGTCTCCGCCTTTCTAATCCCTCCCTCCTCATTCTCTCCCTAATAAAAATTGGAGC
 TCA

SEQ ID NO: 281

>4161733H1

35 CAGCACCATCGCAACCAGTGCCAGTACTGCCGCTCAAAAAGTGCCTCAAAGTG
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 CATTGGAACCCAGACCCCAAATCCGCATGCTTT

40

SEQ ID NO: 282

>gi|183866|gb|M60278.1|HUMHBEGF Human heparin-binding EGF-like growth factor
 mRNA, complete cds

45 GCTACGCGGGCCACGCTGCTGGCTGGCCTGACCTAGGCGCGCGGGGTCTGGGCGG
 CCGCGCGGGCGGGCTGAGTGAGCAAGACAAGACACTCAAGAAGAGCGAGCTGC
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 GGAATCTCCTGAGCTCCGCCGCCAGCTCTGGTGCCAGCGCCAGTGGCCGCCGC
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GACCTCCCACTGTATCCACGGACCAGCTGCTACCCCTAGGAGGCGGCCGGGAC
CGGAAAGTCCGTGACTTGCAAGAGGCAGATCTGGACCTTTTGAGAGTCACTTTAT
CCTCCAAGCCACAAGCACTGGCCACACCAACAAGGAGGAGCACGGGAAAAGA
5 AAGAAGAAAGGCAAGGGGCTAGGGAAGAAGAGGGACCCATGTCTTCGGAAATA
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10 TACCATAGGAGAGGAGGTTATGATGTGGAATAATGAAGAGAAAGTGAAGTTGGGC
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15 ATCTGGGTAAAGAAGAAAGCAAAAGCAAGGGACCTTCATGCCCTTCTGATTCCCT
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25 AAGETAGGATGGTTCTGTGACCCATCTGTAGTAATTTATTGTCTGTCTACATTTCT
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30 TTCCATGCCTGTAGCTTTCCTGGTCCCTCACCCCATGGCCCCAGGCCACAGCGT
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CAAAGCAAAAGGCTGAGAAGGAACAGGGAACATTGGAGCTGACTGTTCTTGGTA
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35 AATCCCAACCCACCTCACCAAAACGATGAAGGTATGCTGTATGGTCCTTTCTGGA
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40 SEQ ID NO: 283

>gi|35039|emb|X61498.1|HSNFKBS H.sapiens mRNA for NF-kB subunit

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45 ATGGAGAGTTGCTACAACCCAGGTCTGGATGGTATTATTGAATATGATGATTTCA
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5 CAGGGCCTTACGGAGGCCGAGCAGCGGGAGCTGGAGCAAGAGGCCAAAGAACT
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10 GAAAGATGACATTGAGGTTTCGGTTCTATGAGGATGATGAGAATGGATGGCAGGC
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15 ACCTTCTCCCAGCCCTTCGGGGGTGGCTCCCACATGGGTGGAGGCTCTGGGGGTG
CAGCCGGGGGCTACGGAGGAGCTGGAGGAGGTGGCAGCCTCGGTTTCTTCCCT
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25 TCACCAGACGCCCTGCACCTGGCGGTGATCACGGGGCAGACGAGTGTGGTGAGC
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35 CCCTACCTCTGATAGCGACTCGGACTCTGAAGGGCCTGAGAAGGACACCCGAAG
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45 GCTCTCGCACGGGCACCCCTGTACAGCGTCCCCACCTATTTCAAATCTTATTTAACAC
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SEQ ID NO: 284

>gi|183537|gb|M37724.1|HUMGPLEU02 Human MDR1/P-glycoprotein gene, exon 7

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5 TGAAGGAATTGGTGACAAAATTGGAATGTTCTTTCAGTCAATGGCAACATTTTTC
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SEQ ID NO: 285

>1322305T6

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GCACTTGTAAGTGAAGAGCTGGAGGTGTCATAGCAGCATAGTGAGAGTGTTTTT
15 GATGAGGGTATGCAGAGTGGGGGTGACCATGTTCCACCTGGGGCCTCAGGTGG
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SEQ ID NO: 286

>1284795H1

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SEQ ID NO: 287

>349590H1

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35 SEQ ID NO: 288

>gi|181075|gb|M28638.1|HUMCRYABA Human alpha-B-crystallin gene, 5' end

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40 GGTCTGGCTGGGAACGAGCTGGGGAGGGGGAGCTGGTGGTGCCTGGGGCATGA
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TCCTCTTCGGTGGCAGGCACTGTGCACCCAATTCCTAAAGCACTCCTGGATTAA
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45 CCAGGGCACGAGGCAGATGGCTGGTGTGACATGTTGACCATCACTGCTCTCTTC
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5 GGGGCTGGCTGTAGCTGCAGCTGAAGGAGCTGACCAGCCAGCTGACCCCTCACA
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SEQ ID NO: 289

>gi|1398343|gb|W85914.1|W85914 zh52c10.s1 Soares_fetal_liver_spleen_1NFLS_S1 Homo
sapiens cDNA clone IMAGE:415698 3', mRNA sequence

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25 TGAAAGGAACTGACTGAGCAGGTATACAAGAGAACCTTCTGGGGTGATGGAAAT
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SEQ ID NO: 290

>3526532H1

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SEQ ID NO: 291

40 >gi|186351|gb|M54894.1|HUMIL6CSF Human interleukin 6 mRNA, complete cds
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10 TTCTTGGAAAGTGTAGGCTTACCTCAAATAAATGGCTAACTTATACATATTTTAA
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SEQ ID NO: 292

15 >14611 BLOOD Hs.82109 gnl|UG|Hs#S269762 H.sapiens syndecan-1 gene (exons 2-5)
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AGGGCTCTGGGGAGCAGGACTTCACCTTTGAAACCTCGGGGGAGAATACGGCTG
TAGTGGCCGTGGAGCCTGACCGCCGGAACCAGTCCCCAGTGGATCAGGGGGCCA
CGGGGGCCTCACAGGGCCTCCTGGACAGGAAAGAGGTGCTGGGAGGGGTCATTG
30 CCGGAGGCCTCGTGGGGCTCATCTTTGCTGTGTGCCTGGTGGGTTTCATGCTGTA
CCGCATGAAGAAGAAGGACGAAGGCAGCTACTCCTTGGAGGAGCCGAAACAAG
CCAACGGCGGGGCTACCAGAAGCCCAACAAACAGGAGGAATTCTATGCCTGAC
GCGGGAGCCATGCGCCCCCTCCGCCCTGCCACTCACTAGGCCCCCACTTGCCTCT
TCCTTGAAGAACTGCAGGCCCTGGCCTCCCTGCCACCAGGCCACCTCCCCAGCA
35 TTCCAGCCCCTCTGGTCGCTCCTGCCCACGGAGTCGTGGGTGTGCTGGGAGCTCC
ACTCTGCTTCTCTGACTTCTGCCTGGAGACTTAGGGCACCAGGGGTTTCTCGCAT
AGGACCTTTCCACCACAGCCAGCACCTGGCATCGCACCATTCTGACTCGGTTTCT
CCAAACTGAAGCAGCCTCTCCCCAGGTCCAGCTCTGGAGGGGAGGGGGATCCGA
CTGCTTTGGACCTAAATGGCCTCATGTGGCTGGAAGATCCTGCGGGTGGGGCTTG
40 GGGCTCACACACCTGTAGCACTTACTGGTAGGACCAAGCATCTTGGGGGGGTGG
CCGCTGAGTGGCAGGGGACAGGAGTCACTTTGTTTCGTGGGGAGGTCTAATCTAG
ATATCGACTTGTTTTTGCACATGTTTCTCTAGTTCTTTGTTTCATAGCCCAGTAGA
CCTTGTTACTTCTGAGGTAAGTTAAGTAAGTTGATTTCGGTATCCCCCATCTTGCT
TCCCTAATCTATGGTCGGGAGACAGCATCAGGGTTAAGAAGACTTTTTTTTTTTTT
45 TTTAAACTAGGAGAACCAAATCTGGAAGCCAAAATGTAGGCTTAGTTTGTGTGTT
GTCTCTTGAGTTTGTGCTCATGTGTGCAACAGGGTATGGACTATCTGTCTGGTG
GCCCCGTTCTGGTGGTCTGTTGGCAGGCTGGCCAGTCCAGGCTGCCGTGGGGCCG
CCGCCTCTTCAAGCAGTCGTGCCTGTGTCCATGCGCTCAGGGCCATGCTGAGGC
CTGGGCCGCTGCCACGTTGGAGAAGCCCGTGTGAGAAGTGAATGCTGGGACTCA

GCCTTCAGACAGAGAGGACTGTAGGGAGGGCGGCAGGGGCCTGGAGATCCTCCT
 GCAGGCTCACGCCCCTCCTCCTGTGGCGCCGTCTCCAGGGGCTGCTTCCTCCTGG
 AAATTGACGAGGGGTGTCTTGGGCAGAGCTGGCTCTGAGCGCCTCCATCCAAGG
 CCAGGTTCTCCGTTAGCTCCTGTGGCCCCACCCTGGGCCCTGGGCTGGAATCAGG
 5 AATATTTTCCAAAGAGTGATAGTCTTTTGCTTTTGGCAAACTCTACTTAATCCAA
 TGGGTTTTTCCCTGTACAGTAGATTTTCCAAATGTAATAAACTTTAATATAAAGTA
 GTCTGTGAATGCCACTGCCTTCGCTTCTTGCTCTGTGCTGTGTGTGACGTGACCG
 GACTTTTCTGCAAACACCAACATGTTGGGAACTTGGCTCGAATCTCTGTGCCTT
 CGTCTTTCCCATGGGGAGGGATTCTGGTTCAGGGTCCCTCTGTGTATTGCTTTT
 10 TTGTTTTGGCTGAAATTCTCCTGGAGGTCGGTAGGTTCAAGCAAGGTTTTATAAG
 GCTGATGTCAATTTCTGTGTTGCCAAGCTCCAAGCCCATCTTCTAAATGGCAAAG
 GAAGGTGGATGGCCCCAGCACAGCTTGACCTGAGGCTGTGGTCACAGCGGAGGT
 GTGGAGCCGAGGCCTACCCNCAGACACCTTGGACATCCTCCTCCACCCGGCTG
 CAGAGGCCAGANNCCAGCCCAGGGTCCTGCACTTACTTGCTTATTTGACAACGTT
 15 TCAGCGACTCCGTTGGCCACTCCGAGAGTGGGCCAGTCTGTGGATCAGAGATGC
 ACCACCAAGCCAAGGGAACCTGTGTCCGGTATTCGATACTGCGACTTTCTGCCTG
 GAGTGTATGACTGCACATGACTCGGGGGTGGGGAAAGGGGTCGGCTGACCATGC
 TCATCTGCTGGTCCGTGGGACGGTNCCCAAGCCAGAGGTGGGTTCAATTTGTGTAA
 CGACAATAAA

20

SEQ ID NO: 293

gi|36628|emb|X07820.1|HSSTROM2 Human mRNA for metalloproteinase: stromelysin-2

AAAGAAGGTAAGGGCAGTGAGAAATGATGCATCTTGCATTCCTTGTGCTGTTGTGT
 CTGCCAGTCTGCTCTGCCTATCCTCTGAGTGGGGCAGCAAAAGAGGAGGACTCCA
 25 ACAAGGATCTTGGCCAGCAATACCTAGAAAAGTACTACAACCTCGAAAAGGATG
 TGAAACAGTTTAGAAGAAAGGACAGTAATCTCATTGTTAAAAAATCCAAGGAA
 TGCAGAAAGTTCCTTGGGTTGGAGGTGACAGGGAAGCTAGACACTGACACTCTGG
 AGGTGATGCGCAAGCCCAGGTGTGGAGTTCCTGACGTTGGTCACTTCAGCTCCTT
 TCCTGGCATGCCGAAGTGGAGGAAAACCCACCTTACATACAGGATTGTGAATTAT
 30 ACACCAGATTTGCCAAGAGATGCTGTTGATTCTGCCATTGAGAAAGCTCTGAAAG
 TCTGGGAAGAGGTGACTCCACTCACATTCTCCAGGCTGTATGAAGGAGAGGCTG
 ATATAATGATCTCTTTCGCAGTTAAAGAACATGGAGACTTTTACTCTTTTGATGGC
 CCAGGACACAGTTTGGCTCATGCCTACCCACCTGGACCTGGGCTTTATGGAGATA
 TTCACTTTGATGATGATGAAAAATGGACAGAAGATGCATCAGGCACCAATTTATT
 35 CCTCGTTGCTGCTCATGAACTTGGCCACTCCCTGGGGCTCTTCACTCAGCCAACA
 CTGAAGCTTTGATGTACCCACTCTACAACCTCATTACAGAGCTCGCCCAGTTCCG
 CCTTTCGCAAGATGATGTGAATGGCATTCACTCTCTACGGACCTCCCCCTGCCT
 CTACTGAGGAACCCCTGGTGCCCAAAAATCTGTTCCCTTCGGGATCTGAGATGCC
 AGCCAAGTGTGATCCTGCTTTGTCCTTCGATGCCATCAGCACTCTGAGGGGAGAA
 40 TATCTGTTCTTTAAAGACAGATATTTTTGGCGAAGATCCCACTGGAACCCTGAAC
 CTGAATTTCAATTTGATTTCTGCATTTTGGCCCTCTCTTCCATCATATTTGGATGCTG
 CATATGAAGTTAACAGCAGGGACACCGTTTTTATTTTTAAAGGAAATGAGTTCTG
 GGCCATCAGAGGAAATGAGGTACAAGCAGGTTATCCAAGAGGCATCCATACCTT
 GGGTTTTCTCCAACCATAAGGAAAATTGATGCAGCTGTTTCTGACAAGGAAAAG
 45 AAGAAAACATACTTCTTTGCAGCGGACAAATACTGGAGATTTGATGAAAATAGC
 CAGTCCATGGAGCAAGGCTTCCCTAGACTAATAGCTGATGACTTTCAGGAGTTG
 AGCCTAAGGTTGATGCTGTATTACAGGCATTTGGATTTTTCTACTTCTTCAGTGGA
 TCATCACAGTTTGAGTTTGACCCCAATGCCAGGATGGTGACACACATATTAAAGA
 GTAACAGCTGGTTACATTGCTAGGCGAGATAGGGGGAAGACAGATATGGGTGTT

TTTAATAAATCTAATAATTATTCATCTAATGTATTATGAGCCAAAATGGTTAATTT
TTCCTGCATGTTCTGTGACTGAAGAAGATGAGCCTTGCAGATATCTGCATGTGTC
ATGAAGAATGTTTCTGGAATTCTTCACTTGCTTTTGAATTGCACTGAACAGAATT
AAGAAATACTCATGTGCAATAGGTGAGAGAATGTATTTTCATAGATGTGTTATTA
5 CTTCCTCAATAAAAAGTTTATTTTGGGCCTGTTTCCTT

SEQ ID NO: 294

>gi|750011|gb|R00275.1|R00275 ye72b08.s1 Soares fetal liver spleen 1NFLS Homo sapiens
cDNA clone IMAGE:123255 3', mRNA sequence

10 TTANTCAATTTGCTATGTATATACGNGTTTATTATATGCTTATTACAAAAGAAAA
AGTCTTTTGCCTTATTTTAGGGCTTCCATGTAAAACCTAGTTAAAATACAAAAG
TAAATTAGNGAAAAATTCTGCTTAGGNAGTGAAANTTGATAGCAACTTATAAGC
TGTATCCTTAAAANCCTAGTCACAGATNTAGNNTTACGTAAAGNTAAANTGATA
AGCCTACTTNTTGGCAAGAANCAGGTTAGGCCACTTANGCAGCATGTTTCTNCCA
15 CTNTACANTTACATCGGCAGGTCCAAACNTTAANCCACCNTTCGNTTGACAACCT
TCTATTTTCAACTT

SEQ ID NO: 295

>gi|1496145|gb|AA029889.1|AA029889 zk08e05.s1 Soares_pregnant_uterus_NbHPU Homo
sapiens cDNA clone IMAGE:469952 3', mRNA sequence

20 TTTTTTTTCTGTTTGTCTGATTTTATTATTTAAAAAAATGGAAAAACAAAAGT
GCATTTTTCATTCAATAAATGTTCCATCCTTATTTAGTTTGTGCGGAAAGTGAA
GTCCATGACTTTAGAATGATAGCAATTTATCAACCAAAGAATCCGTCTTCACACC
GTTTCAATAAAGTGCAGCAATTTTCTTGAAGTGTGTGTAGAAATTCTGAAACTGTG
25 GAATCGTCATTTCAAAGCACTTGGTCTTACTTGGCCTGAATGATCTGCCACTTTT
AGCATCACTGCAACGTAAGGATACTTAAGAGATCTGCAAGTGTCTGAGCTCACA
GCCATACCCAGTTTCCACTGAAAATCTACAAGCTGGGTGGTGACATCGGACTTAG
CATCCAGCGGCGGCCTCGGTGCC

30 SEQ ID NO: 296

>gi|307127|gb|L08096.1|HUMLIGAND Human CD27 ligand mRNA, complete cds

CCAGAGAGGGGCAGGCTTGTCCTTGACAGGTTGAAGCAAGTAGACGCCAGGA
GCCCCGGGAGGGGGCTGCAGTTTCTTCTTCTTCTCGGCAGCGCTCCGCGCCC
CCATCGCCCCCTCTGCGCTAGCGGAGGTGATCGCCGCGGCGATGCCGGAGGAGG
35 GTTCGGGCTGCTCGGTGCGGCGCAGGCCCTATGGGTGCGTCTTGCAGGCTGCTT
GGTCCCATTTGGTTCGCGGGCTTGGTGATCTGCCTCGTGGTGTGCATCCAGCGCTTC
GCACAGGCTCAGCAGCAGCTGCCGCTCGAGTCACTTGGGTGGGACGTAGCTGAG
CTGCAGCTGAATCACACAGGACCTCAGCAGGACCCAGGCTATACTGGCAGGGG
GGCCCAGCACTGGGCCGCTCCTTCTTGCATGGACCAGAGCTGGACAAGGGGCAG
40 CTACGTATCCATCGTGATGGCATCTACATGGTACACATCCAGGTGACGCTGGCCA
TCTGCTCCTCCACGACGGCTCCAGGCACCAACCCACCACTGGCCGTGGGAAT
CTGCTCTCCCGCCTCCCGTAGCATCAGCCTGCTGCGTCTCAGCTTCCACCAAGGTT
GTACCATTGTCTCCAGCGCCTGACGCCCCTGGCCCGAGGGGACACACTCTGCAC
CAACCTCACTGGGACACTTTTGCCTTCCCGAAACACTGATGAGACCTTCTTTGGA
45 GTGCAGTGGGTGCGCCCCCTGACCACTGCTGCTGATTAGGGTTTTTTAAATTTTATT
TTATTTTATTTAAGTTCAAGAGAAAAAGTGTACACACAGGGGCCACCCGGGGTTG
GGGTGGGAGTGTGGTGGGGGGTAGTTTGTGGCAGGACAAGAGAAGGCATTGAGC
TTTTTCTTTCATTTTCTTATTAATAAATAACAAAATCAAAAACAAAAA

SEQ ID NO: 297

>gi|788599|gb|R32756.1|R32756.yh74b09.s1 Soares placenta Nb2HP Homo sapiens cDNA clone IMAGE:135449 3' similar to gb:X66899 RNA-BINDING PROTEIN EWS (HUMAN);, mRNA sequence

5 GAGGAAGACGAGGTGGCCCTGGGGCCCNCTGGACCTTTGATGGAACAGATGGGA
GGAAGAAGAGGAGGACGTGGAGGACCTGGAAAAATGGATAAAGGCGAGCACCG
TCAGAGCGCAGAGATCGGCCCTACTAGATGCAGAGACCCCGCAGAGCTGCATTG
ACTACCAGATTTATTTTTTAAACCAGAAAAATGTTTTAAATTTATTAATTCCATATT
TATAATGTTGGCCACAACATTATTGATTATTCCTTGTCTGTACTTTAGTATTTTTTC
10 ACCATTTGTGAAGGAAACATTAAAACAAGTTTAAATGGGTNAAAAAAAAAACCT
CGTGCCCGATTCTTNGGCCTTCGAGGGCCAATTTCCCTNTTGGTGAGTCCTATTTN
AAT

SEQ ID NO: 298

15 >556963H1
CTTTCACACAAAGAAAAAGTTGTCTGTGTGCGCAAATCCAAAACAGACTTGGGT
GAAATATATTGTGCGTCTCCTCAGTAAAAAAGTCAAGAACATGTAAAAACTGTG
GCTTTTCTGGAATGGAATTGGACATAGCCCAAGAACAGAAAGAACCTTGCTGGG
GTTGGAGGTTTCACTTGCACATCATGGAGGGTTTAGTGCTTATCTAATTTGTG

20

SEQ ID NO: 299

>gi|179413|gb|M37722.1|HUMBFGFS Human shorter form basic fibroblast growth factor (bFGF) receptor mRNA, complete cds

CCGGCCGCGGAGCTCTTGCGACCCCGCCAGGACCCGAACAGAGCCCGGGGGCGG
25 CGGGCCGGAGCCGGGGACGCGGGCACACGCCCGCTCGCACAAAGCCACGGCGGA
CTCTCCCGAGGCGGAACCTCCACGCCGAGCGAGGGTCAGTTTGAAAAGGAGGAT
CGAGCTCACTGTGGAGTATCCATGGAGATGTGGAGCCTTGTCACCAACCTCTAAC
TGCAGAACTGGGATGTGGAGCTGGAAGTGCCTCCTCTTCTGGGCTGTGCTGGTCA
CAGCAACACTCTGCACCGCTAGGCCGTCCCCGACCTTGCCTGAACAAGATGCTCT
30 CCCCTCCTCGGAGGATGATGATGATGATGATGACTCCTCTTCAGAGGAGAAAGA
AACAGATAACACCAAACCAAACCCCGTAGCTCCATATTGGACATCCCCAGAAAA
GATGGAAAAGAAATTGCATGCAGTGCCGGCTGCCAAGACAGTGAAGTTCAAATG
CCCTTCCAGTGGGACCCCAAACCCCACTGCGCTGGTTGAAAAATGGCAAAGA
ATTCAAACCTGACCACAGAATTGGAGGCTACAAGGTCCGTTATGCCACCTGGAG
35 CATCATAATGGACTCTGTGGTGCCCTCTGACAAGGGCAACTACACCTGCATTGTG
GAGAATGAGTACGGCAGCATCAACCACACATACCAGCTGGATGTCGTGGAGCGG
TCCCCTCACCGGCCCATCCTGCAAGCAGGGTTGCCCGCCAACAAACAGTGGCCC
TGGGTAGCAACGTGGAGTTCATGTGTAAGGTGTACAGTGACCCGCAGCCGCACA
TCCAGTGGCTAAAGCACATCGAGGTGAATGGGAGCAAGATTGGCCCAGACAACC
40 TGCCTTATGTCCAGATCTTGAAGACTGCTGGAGTTAATACCACCGACAAAGAGAT
GGAGGTGCTTCACTTAAGAAATGTCTCCTTTGAGGACGCAGGGGAGTATACGTGC
TTGGCGGGTAACTCTATCGGACTCTCCCATCACTCTGCATGGTTGACCGTTCTGG
AAGCCCTGGAAGAGAGGCCCGGCAGTGATGACCTCGCCCCTGTACCTGGAGATCA
TCATCTATTGCACAGGGGCCTTCCTCATCTCCTGCATGGTGGGGTCGGTCATCGTC
45 TACAAGATGAAGAGTGGTACCAAGAAGAGTGAAGTCCACAGCCAGATGGCTGTG
CACAAGCTGGCCAAGAGCATCCCTCTGCGCAGACAGGTAACAGTGTCTGCTGAC
TCCAGTGCATCCATGAACTCTGGGGTTCTTCTGGTTCGGCCATCACGGCTCTCCTC
CAGTGGGACTCCCATGCTAGCAGGGGTCTCTGAGTATGAGCTTCCCGAAGACCTT
CGCTGGGAGCTGCCTCGGGACAGACTGGTCTTAGGCAAACCCCTGGGAGAGGGC

TGCTTTGGGCAGGTGGTGTGGCAGAGGCTATCGGGCTGGACAAGGACAAACCC
 AACCGTGTGACCAAAGTGGCTGTGAAGATGTTGAAGTCGGACGCAACAGAGAAA
 GACTTGTGACACCTGATCTCAGAAATGGAGATGATGAAGATGATCGGGAAGCAT
 AAGAATATCATCAACCTGCTGGGGGCTGCACGCAGGATGGTCCCTTGTATGTCA
 5 TCGTGGAGTATGCCTCCAAGGGCAACCTGCGGGAGTACCTGCAGGCCCGGAGGC
 CCCCAGGGCTGGAATACTGCTACAACCCAGCCACAACCCAGAGGAGCAGCTCT
 CCTCCAAGGACCTGGTGTCTGCGCCTACCAGGTGGCCCGAGGCATGGAGTATCT
 GGCCTCCAAGAAGTGCATACACCGAGACCTGGCAGCCAGGAATGTCCTGGTGAC
 AGAGGACAATGTGATGAAGATAGCAGACTTTGGCCTCGCACGGGACATTCACCA
 10 CATCGACTACTATAAAAAGACAACCAACGGCCGACTGCCTGTGAAGTGGATGGC
 ACCCGAGGCATTATTTGACCGGATCTACACCCACCAGAGTGATGTGTGGTCTTTC
 GGGGTGCTCCTGTGGGAGATCTTCACTCTGGGCGGCTCCCCATACCCCGGTGTGC
 CTGTGGAGGAACTTTTCAAGCTGCTGAAGGAGGGTCACCGCATGGACAAGCCCA
 GTAACCTGCACCAACGAGCTGTACATGATGATGCGGGACTGCTGGCATGCAGTGC
 15 CCTCACAGAGACCCACCTTCAAGCAGCTGGTGGAAAGACCTGGACCGCATCGTGG
 CCTTGACCTCCAACCAGGAGTACCTGGACCTGTCCATGCCCTGGACCAGTACTC
 CCCCAGCTTTCCCGACACCCGGAGCTCTACGTGCTCCTCAGGGGAGGATTCCGTC
 TTCTCTCATGAGCCGCTGCCCGAGGAGCCCTGCCTGCCCGACACCCAGCCCAGC
 TTGCCAATGGCGGACTCAAACGCCGCTGACTGCCACCCACACGCCCTCCCCAGAC
 20 TCCACCGTCAGCTGTAACCCTCACCCACAGCCCCTGCTGGGCCACCACTGTCC
 GTCCTGTCCCCTTTCTGCTGGCAGGAGCCGGCTGCCTACCAGGGGCCTTCTCTG
 TGTGGCCTGCCTTCACCCCACTCAGCTCACCTCTCCCTCCACCTCCTCTCCACCTG
 CTGGTGAGAGGTGCAAAGAGGCAGATCTTTGCTGCCAGCCACTTCATCCCCTCCAA
 GATGTTGGACCAACACCCCTCCCTGCCACCAAGGCATCTGCCGGATGGGCAGAGT
 25 GGAGCAATGAACAGGCATGCAAGTGAGAGCTTCCTGAGCTTTCTCCTGTGCGTTT
 GGTCTGTTTTGCCTTCACCCATAAGCCCCTCGCACTCTGGTGGCAGGTGCTTGTCC
 TCAGGGCTACAGCAGTAGGGAGGTGAGTCTCGTGCTCGATTGAAGGTGACCT
 CTGCCCCAGATAGGTGGTGGCAGTGGCTTATTAATTCCGATACTAGTTTGTCTTGC
 TGACCAAATGCCTGGTACCAGAGGATGGTGAAGCGAAGGCCAGGTGGGGGCAG
 30 TGTTGTGCCCTGGCCCAGCCAACTGGGGGCTCTGTGGGGGCTCTGTATATAGCT
 ATGAAGAAAACACAAAGTGTATAAATCTGAGTATATATTTACATGTCTTTTTAAA
 AGGGTCGTTACCAGAGATTTACCCATCGGGTAAGATGCTCCTGGTGGCTGGGAG
 GCATCAGTTGCTATATATTAATAAACAAGAAAAAGAAAAAAGGAAAATGTTTTTA
 AAAAGGTCAATATTTTTTTGCTACTTTTGCTGTTTTATTTTTTTAAATTATGTTCTA
 35 AACCTATTTTCAGTTTAGGTCCCTCAATAAAAATTGCTGCTGCTTAAAAACC

SEQ ID NO: 300

>gi|2161764|gb|AA448094.1|AA448094 zw82c03.r1 Soares_testis_NHT Homo sapiens

cDNA clone IMAGE:782692 5', mRNA sequence

40 CCGTTCTGGGGCCCAGGAAGTGGGGAAGAGTAGGTTCTCGGTACTTAGGACTTG
 ATCCTGTGGTTGGCCACTGGCATGCTGCTGCCAGCTCTACCCCTCCCAGGGACC
 TACCCCTCCCAGGGACCGACCCCTGGCCCAAGCTCCCTTGCTGGCGGGCGCTGC
 GTGGGCCCTGCACTTGCTGAGGTTCCCATCATGGGCAAGGAAGGGAATTCCAC
 AGCCCTCCAGTGTACTGAGGGTACTGGCCTAGCCATGTGGAATTCCCTACCCTGA
 45 CTCCTTCCCCAAACCCAGGGAAAAGAGCTCTCAATTTTTTATTTTAAATTTTGT
 TGAAATA

SEQ ID NO: 301

>gi|2219002|gb|AA489400.1|AA489400 ab41a09.r1 Stratagene HeLa cell s3 937216 Homo sapiens cDNA clone IMAGE:843352 5' similar to SW:PRCF_HUMAN P40306

PROTEASOME COMPONENT MECL-1 PRECURSOR ;, mRNA sequence

5 CAAAGGTCCGGAAACTGGCACGACCATCGCTGGGGTGGTCTATAAGGATGGCA
TAGTTCTTGGAGCAGATACAAGAGCAACTGAAGGGATGGTTGTTGCTGACAAGA
ACTGTTCAAAAATACACTTCATATCTCCTAATATTTATTGTTGTGGTGCTGGGACA
GCTGCAGACACAGACATGACAACCCAGCTCATTTCTTCCAACCTGGAGCTCCACT
CCCTCTCCACTGGCCGTCTTCCCAGAGTTGTGACAGCCAATCGGATGCTGAAGCA
10 GATGCTTTTCAGGTATCAAGGTTACATTGGTGCAGCCCTAGTTTTAGGGGGAGTA
GATGTTACTGGACCTCACCTCTACAGCATCTATCCTCATGGATCAACTGATAAGT
TGCCTTATGTCACCATGGGTTCTGGCTCCTTGGCAGCAATGGCTGTATTTGAAGA
TAAG

15 SEQ ID NO: 302

>g1751443

TGAGGGCACATGTTTATTTAGCAGACAAGGTGGGGCTCCATCAGCGGGGTGGCC
TGGGGAGCAGCTGCATGGGTGGCACTGTGGGGAGGGTCTCCCAGCTCCCTCAAT
GGTGTTTCGGGCTGGTGCGGCANTGGCGGCACCTGTNACTCAGCCGTCGATACACT
20 GGTCGATTGGGACAGGGAAGACGATGTGGTTTTTC

SEQ ID NO: 303

>2731293H1

GAGAGGCAGCAGCTTGCTCAGCGGACAAGGATGCTGGGCGTGAGGGACCAAGG
25 CCTGCCCTGCACTCGGGCCTCCTCCAGCCAGTGCTGACCAGGGACTTCTGACCTG
CTGGCCAGCCAGGACCTGTGTGGGGAGGCCCTCCTGCTGCCTTGGGGTGACAATC
TCAGCTCCAGGCTACAGGGAGACCGGGAGGATCACAGTGCCAGCATGGATCCTG
ACAGTGATCAACCTCTGAACAG

30 SEQ ID NO: 304

>gi|2261974|gb|AA521431.1|AA521431 aa69b11.s1 NCI_CGAP_GCB1 Homo sapiens
cDNA clone IMAGE:826173 3' similar to gb:J03191 PROFILIN I (HUMAN);, mRNA
sequence

TTGTTAGTAG
35 AATCTTTTTTATTCAGAAAAAAAAAACCCAAAAAACAAAAGTTTCCAACCACA
CACGGGAGGGATATGGGTAGGGGGAGGTGTCTGTCCATCCAGCCCTGGCCCCCA
GCCCATGTGGTTTTTGGCAGCAATAAGGGGTATGGGGTAATGGCCCCAAAAATAA
AATGGTTTGTGTGTGTATGGGGAGGAAAGGGGTGCAAAGCTGTGGGGAGGGGTG
AAGGGGAAGGGACAGACGAGGTCAGTACTGGGAACGCCGAAGTGTGGAGGCCA
40 TTTCATAACATTTCTTGTGATCAAACCACCGTGGAAACCTTCTTTGCCCATCAGC
AGGACTAGCGTCTTGTCAGTCTTGGTGACAGTGACATTTAAGGTTGGGGCCCCAC
CGGTGCTCTTGGTACGAAGATCCATGCAAATTTCCCTCGTTAGGAAGTGAGTCCG
GGTCACTGTTTATTTTTTGGCTCTATTTTTTTTTTTGGGCGGTTTTTTTTTGTGTTGGGT
TTTTTTTTCGGGGGGGGGTTCTTTTTTGTAT
45

SEQ ID NO: 305

>gi|1856267|gb|AA233079.1|AA233079 zr69f11.r1 Soares_NhHMPu_S1 Homo sapiens
cDNA clone IMAGE:668685 5' similar to gb:M59316_ma1 INSULIN-LIKE GROWTH
FACTOR BINDING PROTEIN 1 PRECURSOR (HUMAN);, mRNA sequence

TGTTCTGTCACGTGAAATATTTAAGTATATAGTATATTTATACTCTAGAACATGCA
CATTTATATATATATGTATATGTATATATATATAGTAACTACTTTTTATACTCCAT
ACATAACTTGATATAGAAAGCTGTTTATTTATTAAGTGTAAAGTTTATTTTTCTAC
ACAGTAAAAACTTGTACTATGTTAATAACTTGTCTATGTCAATTTGTATATCATG
5 AAACACTTCTCATCATAATGGAAGGAAGGTAATTGCATTCTGCTCTTCCAAAGC
TCCTGCGTCTGTTTTTAAAGAGCATGGAAAAATACTGCCTAGAAAATGCAAAATG
AAATAAGAGAGAGTAGTTTTTCAGCTAGTTTGAAGGAGGACGGTTAACTTGTATA
TTCCACCATTACATTTGATGTACATGTGTAGGGAAAGTAAAAGTGTTGATACAT
AATCAAGCTACCGTGGTGATGTTGCCACTGTTAAATGTACCTGGATATGTTGTTA
10 ACACGTGTCTATAATGGAA

SEQ ID NO: 306

>gi|188627|gb|M26383.1|HUMMONAP Human monocyte-derived neutrophil-activating
protein (MONAP) mRNA, complete cds

15 AGCAGAGCACACAAGCTTCTAGGACAAGAGCCAGGAAGAAACCACCGGAAGGA
ACCATCTCACTGTGTGTAAACATGACTTCCAAGCTGGCCGTGGCTCTCTTGGCAG
CCTTCCTGATTTCTGCAGCTCTGTGTGAAGGTGCAGTTTTGCCAAGGAGTGCTAA
AGAACTTAGATGTCAGTGCATAAAGACATACTCCAAACCTTCCACCCCAAATTT
ATCAAAGAACTGAGAGTGATTGAGAGTGGACCACACTGCGCCAACACAGAAATT
20 ATTGTAAAGCTTTCTGATGGAAGAGAGCTCTGTCTGGACCCCAAGGAAAAGTGG
GTGCAGAGGGTTGTGGAGAAGTTTTTGAAGAGGGCTGAGAATTCATAAAAAAAT
TCATTCTCTGTGGTATCCAAGAATCAGTGAAGATGCCAGTGAAACTTCAAGCAAA
TCTACTTCAACACTTCATGTATTGTGTGGGTCTGTTGTAGGGTTGCEAGATGCAAT
ACAAGATTCTGGTTAAATTTGAATTTTCAAGTAAACAATGAATAGTTTTTCATTGT
25 ACCATGAAATATCCAGAACATACTTATATGTAAAGTATTATTTATTTGAATCTAC
AAAAAACAACAAATAATTTTTAAATATAAGGATTTTCCTAGATATTGCACGGGAG
AATATACAAATAGCAAAATTGAGCCAAGGGCCAAGAGAATATCCGAACCTTTAAT
TTCAGGAATTGAATGGGTTTGCTAGAATGTGATATTTGAAGCATCACATAAAAAAT
GATGGGACAATAAATTTTGCCATAAAGTCAAATTTAGCTGGAAATCCTGGATTTT
30 TTTCTGTAAATCTGGCAACCCTAGTCTGCTAGCCAGGATCCACAAGTCCTTGTTT
CACTGTGCCTTGGTTTTCTCCTTTATTTCTAAGTGGAAAAAGTATTAGCCACCATCT
TACCTCACAGTGATGTTGTGAGGACATGTGGAAGCACTTTAAGTTTTTTCATCAT
AACATAAATTATTTTCAAGTGTAACTTATTAACCTATTTATTATTTATGTATTTAT
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35 TGAATAGTTATAAAGATGTTATAGTAAATTTATTTTATTTTAGATATTAAATGATG
TTTTATTAGATAAATTTCAATCAGGGTTTTTAGATTAAACAAAGAAACAATTGGG
TACCCAGTTAAATTTTCATTTTCAAGATAAACAACAATAATTTTTTTAGTATAAGTA
CATTATTGTTTATCTGAAAGTTTTAATTGAACATAACAATCCTAGTTTGATACTCCC
AGTCTTGTCATTGCCAGCTGTGTTGGTAGTGCTGTGTTGAATTACGGAATAATGA
40 GTTAGAACTATTAAACAGCCAAAACCTCCACAGTCAATATTAGTAATTTCTTGCT
GGTTGAACTTGTTTATTATGTACAAATAGATTCTTATAATATTATTTAAATGACT
GCATTTTTAAATACAAGGCTTTATATTTTAACTTTAAGATGTTTTTATGTGCTCT
CCAAATTTTTTTTACTGTTTCTGATTGTATGGAAATATAAAAGTAAATATGAAAC
ATTTAAATATAATTTGTTGTCAAAGTAAAAAAAAAAAAAAAAA
45

SEQ ID NO: 307

>3530687H1

AGATCATTTACACAATGCTGGCCTCCTTGATGAATAAAGATGGGGTTCTCATATC
CGAGGGCCAAGGCTTCATGACAAGGGAGTTTCTAAAGAGCCTGCGAAAGCCTTT

TGGTGACTTTATGGAGCCCAAGTTTGAGTTTGCTGTGAAGTTCAATGCACTGGAA
TTAGATGACAGCGACTTGGCAATATTTATTGCTGTCAATTATTCTCAGTGGAGACC
GCCCAGGTTTGCTGAATGTGAAGCCCATGAAGACATTCAAGACAACCTGCTACA
AGCCCTGGAGCTCCAGCTGAAG

5

SEQ ID NO: 308

>gi|1164660|gb|N41062.1|N41062 yy53h05.s1 Soares_multiple_sclerosis_2NbHMSP Homo sapiens cDNA clone IMAGE:277305 3' similar to gb:X06820 TRANSFORMING PROTEIN RHOB (HUMAN);, mRNA sequence

10 GCGACCGCTCTCTACCCGGACACCGACGTCATTCTCATGTGCTTCTCGGTGGAC
AGCCCGGACTCGCTGGAGAACATCCCCGAGAAAGTGGGTCCCCGAGGTGAAGCAC
TTCTGTCCCAATGTGCCCATCATCCTGGTGGCCAACAANAAAGACCTGCGCAGGA
CGAGCATGTCCGCACAGAGCTGGCCCGCATGAAGCAGGAACCCGTGCGCACGGA
TGACGGCCGCGCATGGCCGTGCGCATCCAAGCCTACGACTACCTCGAGTGCTCTG
15 CCAAGACCAAGGAAGGCGTGCGCGAGGTCTTCGAGACGGCCACGCGCGCCGNNT
GCAAGAAAGCGTTACGGCTCCCAGAACGGCTGCATCAACTGCTGCAAGGTGCTA
TGAGGGCCGCGC

SEQ ID NO: 309

20 >gi|2078854|gb|AA419108.1|AA419108 zv34a06.r1 Soares ovary tumor NbHOT Homo sapiens cDNA clone IMAGE:755506 5' similar to gb:M82809 ANNEXIN IV (HUMAN);, mRNA sequence

CGGTCTCGTGGGCAGAGGAACAACCAGGAACCTGGGGCTCAGTCTCCACCCCAACA
GTGGGGGCGGATCCGTCGCCGATAAGACCCGCTGTCTGGCCCTGAGTAGGGTGTG
25 ACCTCCGCAGCCGCAGAGGAGGAGCGCAGCCGGCCTCGAAGAACTTCTGCTTGG
GTGGCTGAACTCTGATCTTGACCTAGAGCATGGCATGCAACCAAAGGAGGTACT
GTCAAAGCTGCTTCAGGATTCAATGCCATGGAAGATGCCCAGACCCTGAGGAAG
GCCATGAAAGGGCTCGGCACCGATGAAGACGCCATTATTAGCGTCCTTGCCCTACC
GCAACACCGCCCAGCGCCAGGAGATCAGGACAGCCTACAAGAGCACCATCGGCA
30 GGGACTTGATAGACGACCTGAAGTCAGAACTGAGTGGCACTTCGAGCAGGTGAT
TGTGGGGATGATGACGCCACGTGCTGTATGACGTGCAAGAGCTGCGAAGGGCC
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35 SEQ ID NO: 310

>gi|183622|gb|J03561.1|HUMGRO Human gro (growth regulated) gene

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GGCCCGCGCTGCTCTCTCCGCGCCCCCAGCAATCCCCGGCTCCTGCGAGTGGCA
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40 CCACTGAACTGCGCTGCCAGTGCTTGCAGACCCTGCAGGGAATTCACCCCAAGA
ACATCCAAAGTGTGAACGTGAAGTCCCCCGGACCCCACTGCGCCCCAAACCGAAG
TCATAGCCACACTCAAGAATGGGCGGAAAGCTTGCCTCAATCCTGCATCCCCCAT
AGTTAAGAAAATCATCGAAAAGATGCTGAACAGTGACAAATCCAATGACCAGA
AGGGAGGAGGAAGCTCACTGGTGGCTGTTTCTGAAGGAGGCCCTGCCCTTATAG
45 GAACAGAAGAGGAAAGAGAGACACAGCTGCAGAGGCCACCTGGATTGTGCCTA
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TTGAAGATTCTATGTTAATATTTTAGGTGTAAAATAATTAAGGGTATGATTA
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GTTCAATCTGGATTCATATTTAATTTGAAGGTAGAATGTTTTCAAATGTTCTCCAG

TCATTATGTTAATATTTCTGAGGAGCCTGCAACATGCCAGCCACTGTGATAGAGG
CTGGCGGATCCAAGCAAATGGCCAATGAGATCATTGTGAAGGCAGGGGAATGTA
TGTGCACATCTGTTTTGTAAGTGTGTTAGATGAATGTCAGTTGTTATTTATTGAAAT
GATTTACAGTGTGTGGTCAACATTTCTCATGTTGAAACTTTAAGAACTAAAATG
5 TTCTAAATATCCCTTGGACATTTTATGTCTTTCTTGTAAAGGCATACTGCCTTGT
AATGGTAGTTTTACAGTGTCTTGGCTTAGAACAAAGGGGCTTAATTATTGATGT
TTTCGGA

SEQ ID NO: 311

10 >gi|416292|gb|M34064.1|HUMNCADH Human N-cadherin mRNA, complete cds
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AAGAGCTTGTGAGGATCAGGTCTGATAGAGATAAAAAACCTTTCACTGCGGTACA
GTGTAAGTGGGCCAGGAGCTGACCAGCCTCCAAGTGGTATCTTCATTCTCAACCC
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15 GTTTCATTTGAGGGCACATGCAGTAGATATTAATGGAAATCAAGTGGAGAACCC
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CACCAGGTTTGAATGGGACAGTTCCTGAGGGATCAAAGCCTGGAACATATGTG
ATGACCGTAACAGCAATTGATGCTGACGATCCCAATGCCCTCAATGGGATGTTGA
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20 CAACAATGAGACTGGTGACATCATCACAGTGGCAGCTGGACTTGATCGAGAAAA
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TAGACATCATAGTAGCTAATCTAACTGTGACCGATAAGGATCAACCCCATACAC
25 AGCCTGGAACGCAGTGTACAGAATCAGTGGCGGAGATCCTACTGGACGGTTCGC
CATCCAGACCGACCCAAACAGCAACGACGGGTTAGTCACCGTGGTCAAACCAAT
CGACTTTGAAACAAATAGGATGTTTGTCTTACTGTTGCTGCAGAAAATCAAGTC
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30 CCAAGAAGAAGGGCTTCATGCCGGTACCATGTTGACAACATTCACTGCTCAGGA
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35 GATATTAATGACAATGCCCTCAAGTGTTACCTCAAGAGGCAGAGACTTGCGAA
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40 TCCCAAATCAAATATTTCCATCCTGCGCGTGAAGGTTTGCCAGTGTGACTCCAAC
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45 AGAAGAAGACCAGGACTATGACTTGAGCCAGCTGCAGCAGCCTGACACTGTGGA
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5 CTGCTGGAGGCTTTGGCATAGGCTGCAAACCAATTTGGGCTCAGAGGGAATATC
AGTGATCCATACTGTTTGGAAAAACACTGAGCTCAGTTACACTTGAATTTTACAG
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10 GTTACATTGCATTTGCTTTTATTAAAATACAAAATTAACAAACAAAAAACTCA
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15 CTTTTTATTTCTGTATTTTCCACTTCACTGTAAAAATAGTATGTGTACATAATGTT
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25 SEQ ID NO: 312

>1334463H1

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30 TTCTCCTGATGGCCAGTATGTCCCAGGATTATGTTTGTGACCCATCTCTGACAG
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35 SEQ ID NO: 313

>gi|2216301|gb|AA486085.1|AA486085 ab14c11.s1 Stratagene lung (#937210) Homo
sapiens cDNA clone IMAGE:840788 3' similar to gb:S54005 THYMOSIN BETA-10
(HUMAN);, mRNA sequence

GGTGTGTTTTATTTTCATTATTCATACAAATAATTTTCTATAATATCCCGGGGCAA
ACCGGAGAATTTGGCAGTCCGATTGGGGGG

40 SEQ ID NO: 314

>gi|292418|gb|M64749.1|HUMRDC1A Human homologue of the canine orphan receptor
(RDC1) mRNA, 5' end

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45 GGCCATGCAACAGCAGCGACTGCATCGTGGTGGACACGGTGATGTGTCCCAACA
TGCCCAACAAAAGCGTCCTGCTCTACACGCTCTCCTTCATTTACATTTTCATCTTC
GTCATCGGCATGATTGCCAACTCCGTGGTGGTCTGGGTGAATATCCAGGCCAAGA
CCACAGGCTATGACACGCACTGCTACATCTTGAACCTGGCCATTGCCGACCTGTG
GGTTGTCCTCACCATCCAGTCTGGGTGGTCACTCTCGTGCAGCACAACCAGTGG

CCCATGGGCGAGCTCACGTGCAAAGTCACACACCTCATCTTCTCCATCAACCTCT
TCAGCGGCATTTTCTTCTCACGTGCATGAGCGTGGACCGCTACCTCTCCATCACC
TACTTCACCAACACCCCCAGCAGCAGGAAGAAGATGGTACGCCGTGTCGTCTGC
ATCCTGGTGTGGCTGCTGGCCTTCTGCGTGTCTCTGCCTGACACCTACTACCTGAA
5 GACCGTCACGTCTGCGTCCAACAATGAGACCTACTGCCGGTCCTTCTACCCCGAG
CACAGCATCAAGGAGTGGCTGATCGGCATGGAGCTGGTCTCCGTTGTCTTGGGCT
TTGCCGTTCCCTTCTCCATTATCGCTGTCTTCTACTTCCTGCTGGCCAGAGCCATC
TCGGCGTCCAGTGACCAGGAGAAGCACAGCAGCCGGAAGATCATCTTCTCCTAC
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10 TCTTCTCCATCCTGCACTACATCCCTTTCACCTGCCGGCTGGAGCACGCCCTCTTC
ACGGCCCTGCATGTCACACAGTGCCTGTGCTGGTGCCTGCTGCGTCAACCCTG
TCCTCTACAGCTTCATCAATCGCAACTACAGGTACGAGCTGATGAAGGCCTTCAT
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TCGGAGACGGAGTACTCCGCCTTGGAGCAAAACGCCAAG

15

SEQ ID NO: 315

>gi|183866|gb|M60278.1|HUMHBEGF Human heparin-binding EGF-like growth factor
mRNA, complete cds

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CCGCGCGGGCGGGCTGAGTGAGCAAGACAAGACACTCAAGAAGAGCGAGCTGC
GCCTGGGTCCCGGCCAGGCTTGACGCGAGAGGCGGGCGGCAGACGGTGCCCGGC
GGAATCTCCTGAGCTCCGCCGCCAGCTCTGGTGCCAGCGCCAGTGGCCGCCGC
TTGAAAGTGACTGGTGCCCTCGCCGCCTCCTCTCGGTGCGGGACCATGAAGCTGC
TGCCGTGCGGTGGTGCTGAAGCTCTTCTGGCTGCAGTTCTCTCGGCACTGGTGACT
25 GGCGAGAGCCTGGAGCGGCTTCGGAGAGGGCTAGCTGCTGGAACCAGCAACCCG
GACCCTCCCACTGTATCCACGGACCAGCTGCTACCCCTAGGAGGCGGCCGGGAC
CGGAAAGTCCGTGACTTGCAAGAGGCAGATCTGGACCTTTTGAGAGTCACTTTAT
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30 CAAGGACTTCTGCATCCATGGAGAATGCAAATATGTGAAGGAGCTCCGGGCTCC
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CCAGTGGAATAATCGTTATATACCTATGACCACACAACCATCCTGGCCGTGGTGG
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35 ATGACTAATTCCCACTGAGAGAGACTTGTGCTCAAGGAATCGGCTGGGGACTGCT
ACCTCTGAGAAGACACAAGGTGATTTCACTGTCAGAGGGGAAAGACTTCCATC
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40 CCACCAAACCCCACTTCCCCTCATAAGTTTGTTTAAACACTTATCTTCTGGATTAG
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5 TTCCATGCCTGTAGCTTTCCTGGTCCCTCACCCCCATGGCCCCAGGCCACAGCGT
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TGCTACTCCATGCAGGGGTCAGTGCAGCAGAGGACAGTCTGGAGAAGGTATTAG
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10 AATCCACCCACCTCACCAAAACGATGAAGGTATGCTGTCATGGTCCCTTCTGGA
AGTTTCTGGTGCCATTTCTGAACTGTTACAACCTTGTATTTCCAAACCTGGTTCATA
TTTATACTTTGCAATCCAAATAAAGATAACCCTTATTCATAAAAAAAAAAAAAA
AAAA

15 SEQ ID NO: 316

>gi|179664|gb|K02765.1|HUMC3 Human complement component C3 mRNA, alpha and beta
subunits, complete cds

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CACCATGGGACCCACCTCAGGTCCCAGCCTGCTGCTCCTGCTACTAACCACCTC
20 CCCCTGGCTCTGGGGAGTCCCATGTACTCTATCATCACCCCAACATCTTGCGGC
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25 CAGGCCACCTTCGGGAACCAAGTGGTGGAGAAGGTGGTGTCTGGTCAGCCTGCAG
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30 ACATGGGCCAGTGGAAGATCCGAGCCTACTATGAAAACCTACCACAGCAGGTCT
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35 TTCCGATTGAGGATGGCTCGGGGGAGGTTGTGCTGAGCCGGAAGGTACTGCTGG
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25 AACGGCTGAAGCACCTCATTGTGACCCCTCGGGCTGCGGGGAACAGAACATGA
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45 GACCTCAAGGTCACCATAAAACCAGCACCGGAAACAGAAAAGAGGCCTCAGGAT
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 5 AAGGTCACCCTGGAAGAACGGCTGGACAAGGCCTGTGAGCCAGGAGTGGACTAT
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 10 CAACCTCAGCTACATCATCGGGAAGGACACTTGGGTGGAGCACTGGCCTGAGGA
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SEQ ID NO: 317

15 >gi|2185691|gb|AA460571.1|AA460571 zx60a08.r1 Soares_testis_NHT Homo sapiens
 cDNA clone IMAGE:795830 5' similar to gb:M95724 CENTROMERE PROTEIN C
 (HUMAN);, mRNA sequence
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 25 GGACAGTCTAAAGATGAAAACATACATACATACATATTACCCANGACGAATTT
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30 SEQ ID NO: 318

>1226731H1

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 35 AACGC
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 G

40

SEQ ID NO: 319

>874 BLOOD 239973.4 D13645 g286008 Human mRNA for KIAA0020 gene, complete cds.
 0

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 ACAGCACAAGAAAAAACAGATTTTATAAAAAATAGTGATTCTGGTTCTTCAAAG
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10 GAAGCATGCAGCCATCGTGGAGTACGCATACAATGACAAAGCCATTTTGGAGCA
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SEQ ID NO: 320

>gi|30125|emb|X54925.1|HSCOLL1 H.sapiens mRNA for type I interstitial collagenase

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SEQ ID NO: 321

>gi|882877|gb|H16637.1|H16637 ym26e06.r1 Soares infant brain 1NIB Homo sapiens cDNA
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PROTEIN 1 PRECURSOR (HUMAN);, mRNA sequence
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SEQ ID NO: 322

>2496910H1

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SEQ ID NO: 323

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SEQ ID NO: 324

>gi|718888|gb|T90375.1|T90375 yd43e04.s1 Soares fetal liver spleen 1NFLS Homo sapiens
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25 SEQ ID NO: 325

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SEQ ID NO: 326

40 >gi|199842|gb|M84683.1|MUSMUC1A Mus musculus episialin (Muc1) mRNA, complete
cds
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SEQ ID NO: 327

35 >1484836T6

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SEQ ID NO: 328

>gi|654754|gb|T52894.1|T52894 ya81f08.s1 Stratagene ovary (#937217) Homo sapiens
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 SLOW-TWITCH MUSCLE A ISOFORM (HUMAN), mRNA sequence

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10 SEQ ID NO: 329

>gi|758680|gb|M23699.1|HUMAMYSA2A Homo sapiens serum amyloid A2-alpha (SAA2)
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SEQ ID NO: 330

>2656 BLOOD 230638.6 U32986:gi1136227 Human xeroderma pigmentosum group E UV-
 damaged DNA binding factor mRNA, complete cds: 0

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5

SEQ ID NO: 331

>2742 BLOOD 334388.1 D14660 g285944 Human mRNA for KIAA0104 gene, complete
cds. 0

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SEQ ID NO: 332

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protein 1 (PEX1) mRNA, complete cds. 0

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SEQ ID NO: 333

30 >2812 BLOOD 1091854.1 X53416 g28242 Human mRNA for actin-binding protein
(filamin) (ABP-280). 0

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SEQ ID NO: 334

>2827 BLOOD 006880.13 U87278 g4099426 Human splicing factor SRp30c gene, exon 2. 0

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SEQ ID NO: 335

45 >2846 BLOOD 407165.16 AF048693 g3170416 Human transcription factor forkhead-like 7
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35 SEQ ID NO: 336

>2898 BLOOD 257782.19 D49738 g736703 Human cytoskeleton associated protein (CG22)
mRNA, complete cds. 0

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SEQ ID NO: 337

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SEQ ID NO: 338

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35

SEQ ID NO: 339

>2925 BLOOD 235943.40 J05581 g188869 Human polymorphic epithelial mucin (PEM)

mRNA, complete cds. 0

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10 SEQ ID NO: 341

>2957 BLOOD 425165.31 AF005898 g2209237 Human Na,K-ATPase beta-3 subunit
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 TAAATATTTTATGGATATAACAACGTGCATATTTTGATGTCAACAGAGTTTATAGG
 GATAAAATGGTACCCGGCCAACATCAAGTGACTTTATAGCTGCAAGAAATGTGG
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 40 TTCCAGTTTGAGACCCCCTACTGCATACGAACCTCTGGAATCCTACAAATTCTAC
 AGGCAGCTGTGGACTGGGAATCTCAGAACCAAA

SEQ ID NO: 342

>2959 BLOOD 977665.8 U76421 g2039299 Human dsRNA adenosine deaminase

45 DRADA2b (DRADA2b) mRNA, complete cds. 0

GAGCCCTGGGCGGGGCGGCTGTTGGGGGGAATGGGTTTCGGGGTGCCTTGGGCAG
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 GGGTGGCTGTCAGGGGGAACCTGGGTTCCGGGAGCCCTGGGCGGGGCGGGGGC
 GGCTGTAGGAAGGAACCTGGTTTCGGGGAGCCCTGGGCGGGGCGGCTGTGGGGAG

GAAGGTGACGTGCAGGGGACCAGAGGCTCTGCACTGCTCCTAGGACAGCTCATC
 TGTAATCAGAAAAAATAAACAAAATACAGAACGCTGACTCCTCCGTGAGACA
 GATCGGGGACCTTAGCACTTTAATCCCTCCCTTCTGAGCGCTCGGTGTGCACTTTT
 AGACTATAGCTGTTTCATTGACGTGTCACTCTCCATCCAGTGTCTTGATGTGGCT
 5 TTTAGAGACTTAGCAGAAAATTCGACACAAGCAGGAACCTTGATTTTTTAAGAAA
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 TGTCCTCAGGACCACTCAGGTACAGCTCTGCCAGGGACAGAGTCCTGCTAGTGG
 GAGGTCTCAGGTGGGGCGGTGTGTTCTGTGCCATGAGGCAGCGACAGGTCCAGA
 10 TGGATGTCGTCACCACCTTCCTCAGCTCTCATCACCTGGTTCGTACGCCAGGCCCA
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 15 AGACAGTGTCTCTCCTTGTAATCTCACACAGGTACACTGAGGAGGGGACGGCTCC
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 20 GATTCCTTTTGATCATCCCCACGCTGTGTAAAGTGGAAAGGGCATTGTGTTCCGTG
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 25 TTAGTTGTAAGGGTGTGTCGGCTTTTTTCACTCTCATGTGAAAATCCTCCTGTCTCT
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 30 GATTTTAGAATCTGGACACTTTCTATGAATGTAATTCGGCTGAGAAACATGTTGC
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 ACT

35

SEQ ID NO: 343

>2971 BLOOD 198145.6 U51205 g1730283 Human COP9 homolog (HCOP9) mRNA,
 complete cds. 0

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 40 GGCGAGGCCCGCCGCGAAGATGCCAGTGGCGGTGATGGCGGAAAGCGCCTTTAG
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 AAATTCTGAACCTTGGGGGAATTTGGTCAGTAGGACAAAGAATCTGGCAGAGAGA
 45 TTTCCCTGGGATCTATAACAACCATCAACGCTCACCAGTGGTCTGAGACGGTCCAG
 CCAATTATGGAAGCACTTAGAGATGCAACAAGGAGACGCGCCTTTGCCCTGGTCT
 CTCAAGCGTATACTTCAATCATCGCCGATGATTTTGCAGCCTTTGTTGGACTTCCT
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ACAAGTTTATTCCCTTATCAGAGCCTGCTCCAGTTCCCCCAATACCCAATGAACA
 GCAGTTAGCCAGACTGACGGATTATGTGGCTTTCCTTGAAAACCTGATTATCACT
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 AGTTTGTATTTTCAATTTATTGGATGGCTTAAGCACCTCAGCATTCTTACTATGT
 5 GATAAAATACATATAGAATATAAGATATACTATATACATTTTGTCCATAAACGTT
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 10 TTGTCCCCAGGCACAGTATCTGAATCACTGGGGATTATGATTCACCTCTTTGGA
 GAACATGCTCTCTTTTACCCCCCACCTCCTGAGAGCCACTAATGTAAGATACAG
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 15 TTTTAGAAGGAGAACTTAAGTGTGGAATGCATTATATGGGCAAAGAAGCTATG
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 GCCCTTAGTTTCAATTTACTCTGCATTTGTTCAATAAATATTTAACTGAATTCTTCAA
 20 TTATTTTCATCTAAGATAGTTTCTGGAAATTTCACTCTCGATCTTTCTGTGGACACA
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 GAATCTGTGTAGTGATAATTATATAATTTATTTTGAATGCA

SEQ ID NO: 344

25 >2986 BLOOD Hs.75260 gn|UG|Hs#S269695 H.sapiens mitogen inducible gene mig-2,
 complete CDS /cds=(0,2164) /gb=Z24725 /gi=505032 /ug=Hs.75260 /len=3270
 CAAAAAGTGTGTGGAAAGGTGGATTGAGGGAGCGGGACCCCCGCGGGACCCGA
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 CGGCAGGAAGGAGCCATGGCTCTGGACGGGATAAGGATGCCAGATGGCTGCTAC
 30 GCGGACGGGACGTGGGAACTGAGTGTCCATGTGACGGACCTGAACCGCGATATC
 ACCCTGAGAGTGACCGGCGAGGTGCACATTGGAGGCGTGATGCTTAAGCTGGTG
 GAGAACTCGATGTAAAAAAAGATTGGTCTGACCATGCTCTCTGGTGGGAAAAG
 AAGAGAACTTGGCTTCTGAAGACACATTGGACCTTAGATAAGTATGGTATTCAGG
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 35 CAACATGAAGTATGTGAAGGTGAAAGTGAATTTCTCTGATAGAGTCTTCAAAGCT
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 40 TCATGATGGAAGCCCCTTGTACCAACTTCTGCTTGGTTTGGTGACAGTGCTTTGT
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 45 TGCAATCAGAATCAATCAGCTTTATGAGCAGGCCAAATGGGCCATTCTCCTGGAA
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 30 GAAGTAAAGTTCTATGAAGTATGCATTTTGTGTAACATAATGTAAAAACACAAAT
 TTATAAAATTGTACAGTTTTTTAAAACTACTCACAAGTAGCAGATGGCTTAAAT
 GTAGCAATCTCTGCGTTAATTAATGCCTTTAAGAGATATAATTAACGTGCAGTT
 TTAATATCTACTAAATTAAGAATGACTTCATGATGATCATGATTTGCCACAATGTC
 CTTAACTCTAATGCCTGGACTGGCCATGTTCTAGTCTGTTGCGCTGTTACAATCTG
 35 TATTGGTGCTAGTCAGAAAAATTCCTAGCTCACATAGCCCCAAAAGGGTGCAGAGG
 AGAGGTGGATTACCAGTATTGTTCAATAATCCATGGTTCAAAGACTGTATAAATG
 CATTTTATTTTAAATAAAAGCAAACTTTTATTAAA

SEQ ID NO: 345

40 >2992 BLOOD 1329299.6 AF053944 g3288915 Human aortic carboxypeptidase-like protein
 ACLP mRNA, complete cds. 0
 GAGGACTATGAGGACTGTGAGTAGGGTCTGCCAGCCCCACCTGGGTTCGGACCC
 CTGGCCTGGGGGATGTGCCAATGGGCCCATCCAGCCTTGGGCCCCACTCTGAGC
 CAGCCTCCCCCTCAGTTGAGTACATTCGGCGCCAGAAGCAACCCAGGCCACCCCC
 45 AAGCAGAAGGAGGAGGCCCCGAGCGGGTCTGGCCAGACCCCCCTGAGGAGAAGG
 CCCCCGCCCCAGCCCCGAGGAGAGGATTGAGCCTCCTGTGAAGCCTCTGCTGCC
 CCGCTGCCCCCTGACTATGGTGATGGTTACGTGATCCCCAACTACGATGACATG
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5 TGCCACTGAGGACGACTACTATGATGGTGCGTGGTGTGCCGAGGACGATGCCAG
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10 GAGCCGGTGGTGGCTCGTTTCATCCGCATCTACCCACTCACCTGGAATGGCAGCC
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15 GATCTCAGACAACCCTGGGGAGCATGAACTGGGGGAGCCCGAGTTCCGCTACAC
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20 GAGGGCTTTGACATCTTTGAAGATTTCCCGGATCTCAACTCTGTGCTCTGGGGAG
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CTGAACGCTACCTTTCGCCAGATGCCACGGTATCCACGGAGGTCCGGGCCATCAT
TGCCTGGATGGAGAAGAACCCTTCGTGCTGGGAGCAAATCTGAACGGGGGCGA
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25 CTGGCCGCAGCCATGGCAGCAGCCCGGGGGGAGGATGAGGACGAGGTCTCCGAG
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CTATCAATGACTTCAGTTACCTGCATACCAACTGCCTGGAGCTCTCCTTCTACCTG
30 GGCTGTGACAAGTTCCTCATGAGAGTGAGCTGCCCCGCGAGTGGGAGAACAAC
AAGGAGGCGCTGCTCACCTTCATGGAGCAGGTGCACCGTGGCATTAAAGGGGGTG
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35 ACCTGCAATGTTGACTATGACATCGGGGCCACTCAGTGCAACTTCATCCTGGCTC
GCTCCAACCTGGAAGCGCATCCGGGAGATCATGGCCATGAACGGGAACCGGCCTA
TCCCACACATAGACCCATCGCGCCCTATGACCCCCAACAGCGACGCCTGCAGCA
GCGACGCCTACAACACCGCCTGCGGCTTCGGGCACAGATGCGGCTGCGGCGCCT
CAACGCCACCACCACCTAGGCCCCACACTGTGCCTCCCACGCTGCCCCCTGCC
40 CCTGCCACCACCCTGAGCACTACCATAGAGCCCTGGGGCCTCATACCGCCAACCA
CCGCTGGCTGGGAGGAGTCGGAGACTGAGACCTACACAGAGGTGGTGACAGAGT
TTGGGACCGAGGTGGAGCCCGAGTTTGGGACCAAGGTGGAGCCCGAGTTTGAGA
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AGGAGGAGGAGAAAGAGGAGGAGATAGCCACTGGCCAGGCATTCCCCTTCACA
45 ACAGTAGAGACCTACACAGTGAACCTTGGGGACTTCTGAGATCAGCGTCCTACCA
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CAGTCACATCACCCATCAGCACATGGAAGGCCCTGGTATGGACACTGAAAGGA
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SEQ ID NO: 346

- 5 >3030 BLOOD GB_AA486221 gi|2216437|gb|AA486221|AA486221 ab35e07.s1 Stratagene
HeLa cell s3 937216 Homo sapiens cDNA clone IMAGE:842820 3', mRNA sequence
[Homo sapiens]
CTTTATTGGGAAACGTAAGACTTGGGTACATCAAATAAAACCAATTTCTGGGGGA
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10 CAATAAAAAAAAAAAGTTAACTGTCTGGGCCACAGCAGAACCCAAAGAACATAT
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SEQ ID NO: 347

- >3033 BLOOD 371542.10 M93056 g188621 Human monocyte/neutrophil elastase inhibitor
mRNA sequence. 0
15 CTCACTTCTGCTTGCACCTAGGCGACCTCGGGAGCTCGGACTCCTACGCAGTCAC
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20 AGCAAACACCCGCTTCGCCTTGGACCTGTTGCCTGGCGTTGAGTGAGAACATCC
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CACGGTTGAAGAGGTTTCAATCAAGATTCAGAGTCTGAATGCTGATATCAACAAA
CGTGGAGCGTCTTATATTCTGAAACTTGCTAATAGATTATATGGAGAGAAAACTT
25 ACAATTTCTTCTGAGTTCTTGGTTTCGACTCAGAAAACATATGGTGCTGACETG
GCCAGTGTGGATTTTCAGCATGCCTCTGAAGATGCAAGGAAGACCATAAACCAG
TGGGTCAAAGGACAGACAGAAGGAAAAATTCGGAAGTGTGGCTTCGGGCATG
GTTGATAACATGACCAACTTGTGCTAGTAAATGCCATCTATTTCAAGGGAACT
GGAAGGATAAATTCATGAAAGAAGCCACGACGAATGCACCATTGAGATTGAATA
30 AGAAAGACAGAAAACTGTGAAAATGATGTATCAGAAAGAAAAAATTTGCATATG
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GAAGAAGATTGAGGAACAGTTGACTTTGAAAAGTTGCATGAGTGGACTAAACC
TGAGAATCTCGATTTCAATTGAAGTTAATGTCAGCTTGCCCAGGTTCAAACCTGGAA
35 GAGAGTTACACTCTCAACTCCGACCTCGCCCGCCTAGGTGTGCAGGATCTCTTTA
ACAGTAGCAAGGCTGATCTGTCTGGCATGTCAGGAGCCAGAGATATTTTATATC
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40 ATTCTTGGGGAGATTTTCTTCCCCTTAGAAGAAAGAGACTGTAGCAATACAAAAA
TCAAGCTTAGTGCTTTATTACCTGAGTTTTTAATAGAGCCAATATGTCTTATATCT
TTACCAATAAAACCACTGTTTCAGAAAAA

SEQ ID NO: 348

- 45 >3050 BLOOD 243794.24 Y00345 g35569 Human mRNA for polyA binding protein. 0
CCTTCTCCCCGGCGGTTAGTGCTGAGAGTGCGGAGTGTGTGCTCCGGGCTCGGAA
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TTCTTCCTCTTTTATAAAATAACCCGGTGAAGCAGCCGAGACCGACCCGCCCGCC

CGCGGCCCCGACGAGCTCCAAGAAGGAACCAAGAGACCGAGGCCTTCCCGCTG
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10 CATGAATTTTGATGTTATAAAGGGCAAGCCAGTACGCATCATGTGGTCTCAGCGT
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25 AGAAGCCACTAAAGCAGTTACAGAAATGAACGGTAGAATTGTGGCCACAAAGCC
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GAACCGTGCTGCATACTATCCTCCTAGCCAAATTGCTCAACTAAGACCAAGTCCT
30 CGCTGGACTGCTCAGGGTGCCAGACCTCATCCATTCCAAAATATGCCCGGTGCTA
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GGTTCCACGAGTCATGTCAACACAGCGTGTGCTAACACATCAACACAGACAAT
GGGTCCACGTCTCTGCAGCTGCAGCCGCTGCAGCTACTCCTGCTGTCCGCACCGTT
CCACAGTATAAATATGCTGCAGGAGTTCGCAATCCTCAGCAACATCTTAATGCAC
35 AGCCACAAGTTACAATGCAACAGCCTGCTGTTTCATGTACAAGGTCAGGAACCTTT
GACTGCTTCCATGTTGGCATCTGCCCCCTCTCAAGAGCAAAGCAAATGTTGGGT
GAACGGCTGTTTCCTCTTATTCAAGCCATGCACCCTACTCTTGCTGGTAAAATCAC
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>3052 BLOOD 988653.1 X52541 g31129 Human mRNA for early growth response protein 1 (hEGR1). 0

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 GCCCTGCACCCTTGTACAGTGTCTGTGCCATGGATTTCGTTTTTCTTGGGGTACTC
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 5 TGGGGGAAAACCAAAAAGGAAAAGCCAAGCAAACCAATGGTGATCCTCTATTT
 TGTGATGATGCTGTGACAATAAGTTTGAACCTTTTTTTTTTGAACAGCAGTCCCA
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 10 TGTGTGATGCGCCTTGCTGATGGCTTGACATGTGCAATTGTGAGGGACATGCTCA
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 AATCTAAAACAAAATCTGAACCTCTCAAAGTCTATTTTTTTAACTGAAAATGTAA
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 15 GATTTTTGTATGTTATGAACATGCAGTTCATTATTTTGTGGTTCTATTTTACTTTGT
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 TTGAGGGCTGTGAGGTTTTCTGAAGACTTGGCCTTAGAGATACAAGGATCCTCC
 20 AGCCAGAGTCAGGCCCACTGTGTGAAACTGGAGTTCGTTATTTATGAGGACTGAG
 TATGGGNNN
 NNN
 NNN
 NNTTC
 25 TTGATAATGGGCCTGTTCTCTTCAGTCTGTTGGGCTGAAGCTTACCTTGGTTAG
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 GTTACTCTCCTGGCATCAAATGTTGGGCCAGTCCCGTCCCCACCTCTACTCAGG
 GTTGAAAACCCATGATCTTGGGAATCCCTGCCATGTGCAGTTAGAGGAGGTAA
 GAAGTAGGCACAAGGCCTTTAGGGGAACAGTAACAATGCTGGGGCCGACTCAGC
 30 CTCTCCCTCCCATTTCCCAAGGTCCCCAGCAACTTGAGGGCATCAAAGAAGCCTAG
 ACGAGGTAAAGGCCAGTTCTCAAGCCAAGAATCCTTCCAGGAAGAAATTCTTATT
 ACTTGCCAGCTGGAAGTCCCATCCTTGGCAGCTTCGTGGGACAAAGGATAGAGT
 GGGCAGAAGCCTGGCCTGGTGTCTAAAGTTCCCATCCGGGCCAAATCTGTTCCCA
 TTGTGTAGGAGGCCTCAGGTTCTAGGTTCTTTTGGGCC

35

SEQ ID NO: 350

>3057 BLOOD 346395.5 AF187016 g6601393 Human myosin regulatory light chain
 interacting protein MIR mRNA, complete cds. 0

40 CGCCACCGCGGAGGACAGGTGCAGCTGGCGGGCAGCGGGTGAGGGGGTGGCGG
 GGACGCGAGTGGCGGCCGCGGGGCCCGGACAAGGGTCCGCAGAGCTGCAGCCT
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 CAGCCCCGCGCACACCAAAGAGAAGGCGGCTGTGGCGGCAGCGGCAGCCCCAGC
 CATGCTGTGTTATGTGACGAGGCCGACGCGGTGCTGATGGAGGTGGAGGTGGA
 GGCGAAAGCCAACGGCGAGGACTGCCTCAACCAGGTGTGCAGGCGACTGGGAAT
 45 CATAGAAGTTGACTATTTTGGACTGCAGTTTACGGGTAGCAAAGGTGAAAGTTTA
 TGGCTAAACCTGAGAAACCGGATCTCCAGCAGATGGATGGGCTAGCCCCTTAC
 AGGCTTAAACTTAGAGTCAAGTTCTTCGTGGAGCCTCATCTCATCTTACAGGAGC
 AGACTAGGCATATCTTTTTCTTGACATCAAGGAGGCCCTCTTGGCAGGCCACCT
 CTTGTGTTCCCCAGAGCAGGCAGTGGAAGTCAAGTGCCTCCTGGCCCAGACCAAG

TTTGGAGACTACAACCAGAACACTGCCAAGTATAACTATGAGGAGCTCTGTGCC
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AGGGGACCAGCCAGGCTTCAGCTGAATACCAAGTTTTGCAGATTGTGTGGCAAT
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5 GCTCATTGGGGTTGGACCTGAAGGAATCTCAATTTGTAAAGATGACTTTAGCCCA
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CATTCTACAGGTGTGACACAGTGACCAGCGCCGTGATGATGCAGTATAGCCGTG
10 ACTTGAAGGGCCACTTGGCATCTCTGTTTCTGAATGAAAACATTAACCTTGGCAA
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GAGGGCCTCAGCTGCCAGCAGACCCGGGTGCTGCAGGAGAAGCTACGCAAGCTG
15 AAGGAAGCCATGCTGTGCATGGTGTGCTGCGAGGAGGAGATCAACTCCACCTTC
TGTCCTGTGGCCACACTGTGTGCTGTGAGAGCTGCGCCGCCAGCTACAGTCAT
GTCCCGTCTGCAGGTGCGGTGTGGAGCATGTCCAGCACGTCTATCTGCCAACGCA
CACCAGTCTTCTCAATCTGACTGTAATCTAATCTGTTGTGCTTTTGTGGACTTGG
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20 AGTAATTATTCCAACACCCATCTGCCATGCGATGTTAAAAAAAAAAAAAAGGAA
GAAAAATAACACAGCTACTCCTCACTGCAAAAACATATCCATGCGTAGAATCAA
CAACTCCAGTCATGGGACCAGGAGGAGCTCTGGGACGCAGACACATTCCTTGA
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25 CCTTAATGTATCCTGAGGTAAGTTTCTACTGGCAGCAGATTTTGTAAAGAATTAC
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30 ATGTGGGTGGCTCCCTATTCCTTTACGCTCCCCCTATCCCTACCCCAAGCCTTT
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GTGTACAACCTGAGGGTAGTTAACTCATCACTTCTCCCAAGCACTCGATCCAGCT
35 TCACCCACTGGTGTGCTTTGCTTGAACCTGTTCAAGCCTTTTATAGCCTTACCATA
AGTATTTAGATATGGTGTCTTTTCTGTTTTTGGGGGGGGAGTTTTGTTGTGTTTT
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40 ACCTTATCGGGTGCAATACTAGCTAAGGTAAAGCTAGAAACCTACACTGTCATT
TACTGAGATTTCTGAGTATACTTTTCATATTGCCTTAATGTAGCAGTAATGTGTTT
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TGGCACATATTAGCATATAAGCCTTTATCCAAGAGGTATTTATTTTTTCACTTGT
AAAAAATAATGTTTCCACGTAAAGAACTCTGTTATATCCTAGAGGACTCTGTCT
45 TTTATATTGGGATAATAAAGACTTTAAAGC

SEQ ID NO: 351

>3072 BLOOD 1327030.1 U26162 g829622 Human myosin regulatory light chain mRNA,
complete cds. 0

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GCGCAGGCCGCGATATCGCAGCGGATCGGAGCAGGCCGGAGGGGCAATTAAGA
CCCCGGCCGTGTGCGTCCGGCCTCAGCAGCCCCGCGCTCGGCGGACACGCAGA
CCCCGCCGGCCCCGGGCGGAACACTCAGCGCACCCCCGTTCCACTTGGTCCCGCC
5 GCGCCTTCCGGTGC GCCTTCCGGTGC GCCTTCCGCTCCGCCCCCTCAGGCAGGAA
GTGTCGGCGCCGCCACTGTCCGGCCACAGCCTAACGCTCTTCGCTGTGCTTGTG
GTCTCGCGCAGGGCGGCCCCGGTTCTGGTGTGTTGGCGTCGGAATTAAACAACCAC
CATGTGCGAGCAAAAAGGCAAAAGACCAAGACCACCAAGAAGCGCCCTCAGCGTGC
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10 GCCTTCAACATGATTGATCAGAACAGAGATGGCTTCATCGACAAGGAAGATTG
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TGATGAATGAGGCCCCAGGGCCCATCAATTTACCATGTTCCCTGACCATGTTTGG
TGAGAAGTTAAATGGCACAGATCCTGAAGATGTCATCAGAAACGCCTTTGCTTGC
TTTGATGAAGAAGCAACAGGCACCATTGAGGAAGATTACCTAAGAGAGCTGCTG
15 ACAACCATGGGGGATCGGTTTACAGATGAGGAAGTGGATGAGCTGTACAGAGAA
GCACCTATTGACAAAAAGGGGAATTTCAATTACATCGAGTTCACACGCATCCTGA
AACATGGAGCCAAAGACAAAGATGACTGAAAGAACTTTAGCTAAAATCTTCCAG
TTACATTGTCTTACTCTCTTTTACTTCTCAGACACTTCCCCCACCCTCATAGAACC
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20 GACCTTTCTGCCACTTAGCACTTGTATAATCAGACTGGAAATGGGGATGAGGGTG
TAAATTGTATTGAAAAAGATCGCGAATAAAAAATCAACAAATGTGAAAGCCCAGA
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25 SEQ ID NO: 352

>3210 BLOOD 1095563.3 D00762 g220027 Human mRNA for proteasome subunit HC8. 0

TTTGCGGCATCCTGTGGTATAGGGGAAGCGCTCCGGGCCTGGAATCCCTACGCGT
CCCTTTGGGTTTAGCACGATGAGCTCAATCGGCACTGGGTATGACCTGTCAGCCT
CTACATTCTCTCCTGACGGAAGAGTTTTTCAAGTTGAATATGCTATGAAGGCTGT
30 GGAAAATAGTAGTACAGCTATTGGAATCAGATGCAAAGATGGTGTGCTTTGG
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TTAATGTTGATCGGCATGTTGGAATGGCAGTAGCAGGTTTGTGTCAGATGCTC
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CTACAACATTCCACTAAAACATCTTGCAGACAGAGTGGCCATGTATGTGCATGCA
35 TATACACTCTACAGTGCTGTAGACCTTTTGGCTGCAGTTTCATGTTAGGGTCTTA
CAGTGTGAATGACGGTGC GCAACTCTACATGATTGACCCATCAGGTGTTTCATAC
GGTTATTGGGGCTGTGCCATCGGCAAAGCCAGGCAAGCTGCAAAGACGGAAATA
GAGAAGCTTCAGATGAAAGAAATGACCTGCCGTGATATCGTTAAAGAAGTTGCA
AAAATAATTTACATAGTACATGACGAAGTTAAGGATAAAGCTTTTGAAGTAGAA
40 CTCAGCTGGGTGGTGAATTAATAATGGAAGACATGAAATTGTTCCAAAAGAT
ATAAGAGAAGAAGCAGAGAAATATGCTAAGGAATCTCTGAAGGAAGAAGATGA
ATCAGATGATGATAATATGTAACATTTACTCCAGCATCTATTGTATTTTAAATTC
TACTCCAGTCCAATGTAACATTTAGCCCTGGATTATACATACTGTCCAATTTTCA
45 TTAAATTTTGTCTTAC

SEQ ID NO: 353

>3230 BLOOD 480496.45 L38616 g603444 Human brain and reproductive organ-expressed protein (BRE) gene, complete cds. 0

GCGCGCTCGGGTACCTGTACCCACGTAAGTCGCCGGTTACCGATCGGACTAAGTT
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ACAATTCGGTAATATAGTGGTGATTTACAAGTCAAGTTAAAATGTCCCCAGAAGT
GGCCTTGAACCGAATATCTCCAATGCTCTCCCCTTTCATATCTAGCGTGGTCCGG
5 AATGGAAAAGTGGGACTGGATGCTACAACTGTTTGAGGATAACTGACTTAAAA
TCTGGCTGCACATCATTGACTCCTGGGCCCACTGTGACCGATTAACTGCACA
TACCATATGCTGGAGAGACATTAAGTGGGATATCATTTTCAATGCCCAATACCC
AGAACTGCCTCCCGATTATCTTTGGAGAAGATGCTGAATTCCTGCCAGACCCC
TCAGCTTTGCAGAATCTTGCCTCCTGGAATCCTTCAAATCCTGAATGTCTCTTACT
10 TGTGGTGAAGGAACTTGTGCAACAATATCACCAATTCCAATGTAGCCGCCTCCGG
GAGAGCTCCCGCCTCATGTTTGAATACCAGACATTACTGGAGGAGCCACAGTATG
GAGAGAACATGGAAATTTATGCTGGGAAAAAAAACAACCTGGACTGGTGAATTTT
CAGCTCGTTTCTTTTGAAGCTGCCCGTAGATTTTCAGCAATATCCCCACATACCTT
CTCAAGGATGTAAATGAAGACCCTGGAGAAGATGTGGCCCTCCTCTCTGTAGTT
15 TTGAGGACACTGAAGCCACCCAGGTGTACCCCAAGCTGTACTTGTACCTCGAAT
TGAGCATGCACTTGGAGGCTCCTCAGCTCTTCATATCCCAGCTTTTCCAGGAGGA
GGATGTCTCATTGATTACGTTCTCAAGTATGCCACCTGCTCACCAACAAGGTGC
AGTACGTGATTCAAGGGTATCACAAAAGAAGAGAGTATATTGCTGCTTTTCTCAG
TCACCTTGGCACAGGTGTCTGGAATATGATGCAGAAGGCTTTACAAAACCTCACT
20 CTGCTGCTGATGTGGAAAGATTTTGTCTTGTACACATTGACCTGCCTCTGTT
TTTCCCTCGAGACCAGCCAACCTCTCACATTTAGTCCGTTTATCACTTTACCAACA
GTGGACAGCTTTACTCCAGGCCCAAAAAAATTATCCGTACAGCCCCAGATGGG
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25 GAGGTGGCCAGCCAGACTGCCTGTCCACATGCGTGTGACACATACAGCCGCTTC
CTGGAAGCCGCTGGAATGTCTTACGGCAGCGTTTTGTCTCACACAGCAGCTTTT
GCACGCCCCAGGCAGCCCCGACTGCTGAAATCCAACCTTGAGCTGGCTGGTGGTCC
CTGGATCCTAGAGCCCTTCACTTCGGGTACTCCCTCTTTCTTGCCTCTATTTCTTA
GTTGGAAGAAATAAACTCACAAATTATGGTGCAGTAATTTCCGGGGAAAGTAA
30 AGCCTCAGGAATGCCACGCCTTTCTTCAAAGCCTTTGTCTCTGAGACCTCTTAA
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SEQ ID NO: 354

>3242 BLOOD 201279.14 U37408 g3702074 Human phosphoprotein CtBP mRNA,

complete cds. 0

35 TGCACCCTGAGCTCAATGGGGCTGCCTATAGGTACCCGCNCCACGCCCTTCTCC
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GCCCCGGAGGAGCTCTCCAGCCTCGGCGCCTGGGCAGAGGGCCCGGAAACCCTC
GGACCAGAGTGTGTGGAGGAGGCATCTGTGTGGTGGCCCTGGCACTGCAGAGAC
40 TGGTCCGGGCTGTGAGGAGGCGGGAGGGGGCAGCGCTGGGCCTCGTGTGCTTG
TCGTCGTCCGTCTGTGGGCGCTCTGCCCTGTGTCTTCGCGTTCCTCGTTAAGCA
GAAGAAGTCAGTAGTTATTTCTCCCATGAACGTTCTTGTCTGTGTACAGTTTTAGA
ACATTACAAAGGATCTGTTTGTCTAGCTGTCAACAAAAAGAAAACCTGAAGGAG
CATTTGGAAGTCAATTTGAGGNNNNNNNNNNNNNNNNNNNNNNNNNNNTTGTATGT
45 GGAACGTGCCCCAGAATGAGGCAGTTGGCAAACCTTCTCAGGACAATGAATCCTC
CCGTTTTTCTTTTATGCCACACAGTGCATTGTTTTTCTACCTGCTTGTCTTATTTT
TAGAATAATTTAGAAAAACAAAACAAAGGCTGTTTTTCCTAATTTTGGCAGAACC
CCCC

SEQ ID NO: 355

>3284 BLOOD Hs.6453 gnl|UG|Hs#S377401 Human inositol 1,3,4-trisphosphate 5/6-kinase mRNA, complete cds /cds=(118,1362) /gb=U51336 /gi=1322037 /ug=Hs.6453 /len=3049

5 CGCGAGGACCAGGCCGAGGAGGAAGTGGCGGCGGCGGCGGCGGGCTCCCCGCC
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GCGAGAAGAAAATCAAGAAGCTGAATTTCCAGGCTTTCGCCGAGCTGTGCAGGA
AGCGAGGGATGGAGGTTGTGCAGCTGAACCTTAGCCGGCCGATCGAGGAGCAGG
10 GCCCCCTGGACGTCATCATCCACAAGCTGACTGACGTCATCCTTGAAGCCGACCA
GAATGATAGCCAGTCCCTGGAGCTGGTGCACAGGTTCCAGGAGTACATCGATGC
CCACCCTGAGACCATCGTCCTGGACCCGCTCCCTGCCATCAGAACCCTGCTTGAC
CGCTCCAAGTCCTATGAGCTCATCCGGAAGATTGAGGCCTACATGGAAGACGAC
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15 TGCGGCTGCTGGAGAAGAACGGCTTGACTTTCCATTTCATTGCAAAACCAGAGT
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20 GCGTGTTCGAGCGGCCGAGCGACGAGGTCATCCGGGAGCTCTCCCGGGCCCTG
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25 GGCCGAGCCGGCGGGCGGCCTGGTGGGCGAGCGGACATGCAACGCCAGCCCGG
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TAGCCACGGAGCCGGGACCCAGAGGGCAGCGCAGGCGCAGGAGCACACCCGCT
30 GGGCCAGCAGCTCCCAACGGCGATGCTACTACTAAGAATCCCCAGTGATCTGATT
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AGAAGAGAGTACCAGGTGGTCCACCGTTGGGGAGCGGGGCCGTCCGCCTGCTCT
CTACTGTGCAGACCTCCTAACTGAGTTTACACACGCTTGTGTTGCAACACTAGGT
CTGGATGGGAGGTGAGGGGGGTGCGTATACTGCCATGCCAGTGTCTGTGCACAT
35 CCCTGTCTGTTGTCTCCATGGCCACTGTGGACTGGGACCCTTGAAGCCTGCCCAT
GTGGGTGTGGGAGGCTGATCAGTGCCTGTGAGAGTGGCTTCCCTTCTGCCTGACT
CCCCACTCCCTGACCTGCCCCCTCCTTGTTTTCTCCTACTGGTCTCCACCAAGG
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45 ACCCCTGGGATGCAGCCTGCCTTTCCATAAAGTCACCTAGGTGAGGATAGGCGCG
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CCCCACAAGTATGTTTTTGTGTCTTAAGATAGCAGTTTACTTTGAAAAAGTGAA
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5 CTGAGTGTCCCGAGAGAGGCCCCCGAGCCAGTGCATGGAGGTCTTCGGCCTGGC
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GGGGCAGAGGCCATCAGAACTGCCCGGCTTTTTTGGAACTGAGGACCCAACAA
CTAACACGTTTACACGACTTGAGTTTTGAACCCCGATTAATGTCTGTACGTAC
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10 GCACTGCTTTGTCTCCAAAATAAACTACTGAAATCAAACCGCATTTT

SEQ ID NO: 356

>3325 BLOOD 434815.28 X13916 g34338 Human mRNA for LDL-receptor related protein.

0

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ACCCCCCTCCCCGCCTCCTCCCAATTGTGCATTTTTGCAGCCGGAGGCGGCTCC
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GCGGGGGGTGGGTGAAGGGTTTGGATTTCCGGGGCAGGGGGCGCACCCCCGTCAG
20 CAGGCCCTCCCCAAGGGGCTCGGAACCTCTACCTCTTACCCACGCCCCCTGGTGCG
CTTTGCCGAAGGAAAGAATAAGAACAGAGAAGGAGGAGGGGGAAAGGAGGAAA
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GGAAGGGGCTGCTGCTTGCATCAGCCCCACCATGCTGACCCCGCCGTTGCTCCT
GCTGCTGCCCTGCTCTCAGCTCTGGTTCGGGGCGGCTATCGACGCCCTAAGACT
25 TGCAGCCCCAAGCAGTTTGCCTGCAGAGATCAAATAACCTGTATCTCAAAGGGCT
GGCGGTGCGACGGTGAGAGGGACTGCCCAGACGGATCTGACGAGGCCCCCTGAGA
TTTGTCCACAGAGTAAGGCCCAGCGATGCCAGCCAAACGAGCATAACTGCCTGG
GTACTGAGCTGTGTGTTCCCATGTCCCGCCTCTGCAATGGGGTCCAGGACTGCAT
GGACGGCTCAGATGAGGGGCCCCACTGCCGAGAGCTCCAAGGCAACTGCTCTCG
30 CCTGGGCTGCCAGCACCATTTGTGTCCCCACACTCGATGGGCCCCACCTGCTACTGC
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TATGTGGCTGTGTTGAAGGATACCTCCTGCAGCCGGATAACCGCTCCTGCAAGGC
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35 CATCTTGCCACGTACCTGAGTGGGGGCCAGGTGTCTACCATCACACCTACGAGC
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40 ATCGATGATAGGATCTTTGTCTGCAACAGAAATGGGGACACATGTGTACATTGC
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45 TTGAAGTGGTGGACTATGAGGGCAAGGGCCGCCAGACCATCATCCAGGGCATCC
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TAACAGCACCGAGTACCAGGTTGTACCCCGGTGGACAAGGGTGGTGCCCTCCA
CATCTACCACCAGAGGCGTCAGCCCCGAGTGAGGAGCCATGCCTGTGAAAACGA

CCAGTATGGGAAGCCGGGTGGCTGCTCTGACATCTGCCTGCTGGCCAAACAGCCAC
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5 CCCATTGAAAACCTCATGAACCCCCGAGCCCTGGACTTCCACGCTGAGACCGGCT
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CACTGAGCGGGAGACCATCCTGAAGGACGGCATCCACAATGTGGAGGGTGTGGC
CGTGGACTGGATGGGAGACAATCTGTACTGGACGGACGATGGGCCCCAAAAGAC
AATCAGCGTGGCCAGGCTGGAGAAAGCTGCTCAGACCCGCAAGACTTTAATCGA
10 GGGCAAAATGACACACCCCAGGGCTATTGTGGTGGATCCACTCAATGGGTGGAT
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15 GATTGTGTATGAAGGTCTGAGCTGAACCACGCCTTTGGCCTGTGTACCATGGC
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CCGGGTGAACAATGGCGGCTGCAGCAGCCTGTGCTTGGCCACCCCTGGGAGCCG
20 CCAGTGC GCCTGTGCTGAGGACCAGGTGTTGGACGCAGACGGCGTCACTTGCTTG
GCGAACCCATCCTACGTGCCTCCACCCCAGTGCCAGCCAGGCGAGTTTGCCTGTG
GCAACAGCCGCTGCATCCAGGAGCGCTGGAAGTGTGACGGAGACAAGGATTGCC
TGGACAACAGTGATGAGGCCCCAGCCCTGTGCCATCAGCACACCTGCCCCTCGGA
CCGATTCAAGTGCGAGAACAACCGGTGCATCCCCAACCCTGGCTCTGCGACGG
25 GGACAATGACTGTGGGAACAGTGAAGATGAGTCCAATGCCACTTGTTGAGCCCG
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GGACGTGTGATCTGGATGACGACTGTGGGGACCGCTCTGATGAGTCTGCTTCGTG
TGCTATCCCACCTGCTTCCCCCTGACTCAGTTTACCTGCAACAATGGCAGATGT
ATCAACATCAACTGGAGATGCGACAATGACAATGACTGTGGGGACAACAGTGAC
30 GAAGCCGGCTGCAGCCACTCCTGTTCTAGCACCCAGTTCAAGTGCAACAGCGGG
CGTTGCATCCCCGAGCACTGGACCTGCGATGGGGACAATGACTGCGGAGACTAC
AGTGATGAGACACACGCCAACTGCACCAACCAGGCCACGAGGCCCCCTGGTGGC
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45 SEQ ID NO: 357

>3404 BLOOD 235992.7 D87969 g1694636 Human mRNA for CMP-sialic acid transporter,
complete cds. 0

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15 SEQ ID NO: 358

>3406 BLOOD 198773.4 U91932 g1923269 Human AP-3 complex sigma3A subunit
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SEQ ID NO: 359

>3533 BLOOD 287871.2 U89505 g2078528 Human Hlark mRNA, complete cds. 0

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SEQ ID NO: 360

>3584 BLOOD 978017.7 AF178532 g6851265 Human aspartyl protease (ASP21) mRNA,
complete cds. 0

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5 CTTAATCGTCCTGCTGCTGCTGCCGTTCCGGTGTGAGCGTCGCCCCCGTGACCCTG
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10 TTCAAATCCTCCCTACTTCCAAGAAAAATAATTAATAAAAAAAAAACTTCATTCTAAA
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15 CAAAGTGGTACAGGAAGGCTTGCAGTATGATGGCAGGAGAATCAGCCTGGGGCC
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GTAGAGGGGAAGGAAATCTCCTCTTTTGTACCCAATACTTATGTTGTATTGTTGG
20 TGCGAAAGTAAAAACACTACCTCTTTTGAGACTTTGCCAGGGTCCTGTGCCTGG
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ATCCCAACAGCCAAAGACCCAAACAGGTGCTGAACTGTGCATCAACCAGGAAGAGT
TCTATCCCCAAGCTGGCCACTATCAGATATGCTTACTCTTGCTTAAATTAATAAA
TCATGTTTTGATGAGAAAAAACTATTGTATTTCACTAGCTTAGTTGTCTCTTTTC
25 CAAATCTTCTCTGGAAGTAGGTTGGCTATTACCCTGTTGGGAAACAGGGAAATGG
CCTGATGCCCTATTTCTGACCAGCTGTCAGGGAAGGAAGATGCCAGATGTGCAG
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SEQ ID NO: 361

30 >3598 BLOOD 440860.23 AF044321 g3170263 Human cytochrome c oxidase assembly
protein COX11 (COX11) mRNA, complete cds. 0
ACTGCAACTTAATATTTCTATTTAGAACACAGAAAAATGAAAATATTTAGAATAAG
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35 CACCTGTACATTTTAACATTTCATGGACTTGTAATGGTGTGCTTTGGCTAACAGC
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40 AGACACAATAAACATGGTTAGAAGTTCTGGCCTATGACTTGAAACAAATAACCC
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5 CAATGAGTTCTGCTTTAAGGATGAAGAACAAATTCTAATCTTAAAAGCAGATATC
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10 ATGTAGAAATTCCAATTACTGGTTTGTGAGTAGGATTCTTAGCTCTGTAAACGC
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15 SEQ ID NO: 362

>3627 BLOOD 198840.10 L08850 g437364 Human AD amyloid mRNA, complete cds. 0
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20 GCCTTCAAGCCTTCTGCCTTTCCACCCTCGTGAGCGGAGAACTGGGAGTGGCCAT
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30 GATCTGCTGACAGATGTTCCATCCTGTACAAGTGCTCAGTTCCAATGTGCCCAGT
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40 TTTATCCCATCTCACTTTAATAATAAAAATCATGCTTATAAGCAACATGAATTAA
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45 SEQ ID NO: 363

>3650 BLOOD 1102321.2 D15057 g493244 Human mRNA for DAD-1, complete cds. 0
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GTTCTTAGAAGAGTACTTGAGCTCCACTCCGACGCTCTGAAGTTGCTGGACGCG

TACCTGCTGTATATACTGCTGACCGGGGCGCTGCAGTTCGGTTACTGTCTCCTCGT
GGGGACCTTCCCCTTCAACTCTTTTCTCTCGGGCTTCATCTCTTGTGTGGGGAGTT
TCATCCTAGCGGTTTGCCTGAGAATACAGATCAACCCACAGAACAAAGCGGATTT
CCAAGGCATCTCCCCAGAGCGAGCCTTTGCTGATTTTCTCTTTGCCAGCACCATCC
5 TGCACCTTGTTGTCATGAACCTTTGTTGGCTGAATCATTCTCATTACTTAATTGAG
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AGATGGCAGCTTATTGGACACATGGATTTTCTTCAGATTTGCACTTACTGCTAGCT
CTGCTTTTATGCAGGAGAAAAGCCCAGAGTTCACTGTGTGTCAGAACAACTTTC
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10 CCAAATTAAGAAGCTCCATGCCACTCCTCAAAAA

SEQ ID NO: 364

>3715 BLOOD 1100675.3 U21128 g699576 Human lumican mRNA, complete cds. 0

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15 CACCTGCACCTTCGTTAGAGAGCAGTGTTACATGCCACACCACAAGATCCCCACA
ATGACATAACTCCATTCAGAGACTGGCGTGACTGGGCTGGGTCTCCCCACCCCC
CCTTCAGCTCTTGTATCACTCAGAATCTGGCAGCCAGTTCCGTCTGACAGAGTT
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20 TGCATTTACTCTCTTCTGGCATTGATTGGTGGTACCAGTGGCCAGTACTATGATT
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25 TCTAGATCACAACTTCTAGAAAAGTCCAAGATAAAAGGGAGAGTTTTCTCTAAA
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30 TACCTTGACTTGAGCTTCAATCAGATAGCCAGACTGCCTTCTGGTCTCCCTGTCTC
TCTTCTAACTCTCTACTTAGACAACAATAAGATCAGCAACATCCCTGATGAGTAT
TTCAAGCGTTTAAATGCATTGCAGTATCTGCGTTTATCTCACAACGAACTGGCTG
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35 TACCTGGAGGTCAATCAACTTGAGAAGTTTGACATAAAGAGCTTCTGCAAGATCC
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GTCATGTATGTTTCTTTGATTATTTGCATGTTATGTTTAATAAGCTACTAGCAA
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TTTGTATATAAAATACATAAAACAATAGATTAGAAATCAAAAGATATCTCTGGCC
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 5 ATACAATGGTATTCTATTAGATAAGAAGCTGCTATGTGATCTCAGCACTCACTCC
 TTGGTTGTCAAGAAATGGTGGATAACTCACAGGATTAATAATGAATGAATATAA
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 10 CTGTTTTACCTAGTTAACAATAAAACCTATGTGTGGAGCCAAATGTTATGCAGAC
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 15 ATGAGTTTTCTACATTAAAGGTAAATTCCTTAGAGTGTGATAGCAGCCTCAGTTTA
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 ATTG

SEQ ID NO: 365

20 >3743 BLOOD 1328438.3 U35451 g1177844 Human heterochromatin protein p25 mRNA,
complete cds. 0

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 25 CCAGTAGCGCAGCACCGATTCTCTCGGGGCTCTTGGGCGCTGCTCTGAGCAGCG
 TCACCCTTTACACCAGAAAGCTGGCGGGCACTATGGGGAAAAACAACAAGA
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 GGATTCTCAGATGAGGACAACACATGGGAGCCAGAAGAGAACCTGGATTGCCCC
 30 GACCTCATTGCTGAGTTTCTGCAGTCACAGAAAACAGCACATGAGACAGATAAA
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 35 AGCCAATGTCAAGTGCCACAGGTTGTCATATCCTTCTATGAGGAAAGGCTGACG
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 40 CTGTATAGTTTGCACACCCATCCCAAGTGGAGGGGAAAGGGGATAAGTGTTTCAA
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 GCGTAGCATGTGTGTAGTTTTTGGCTATTACTGGTGTATTATTTGGGGGAGGGAG
 45 GGATGGGGAGGGGAGAAAGGGAGATGGGTAGCATCATTTTGATTAACATTTGGG
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 GGACTGTGAGAGACTGTTTAAAGCTGTGAAAGTCTGAAACCTATAAGCCAAGG
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5 CAGTAGGGGAAAGACAAGGGCCCATGCTCTTAGTGGGGAAAACCTCTTGAGCCGT
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10 TGTCTTGAGTCATGAGAACCATCAGTTCTTGATATTGTCTAGACTTGTCATCTAGA
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15 TTGAAAATCTAGTGCCTGGCCTGAATCTTTAAGTGGTCAC

SEQ ID NO: 366

>3747 BLOOD 233301.19 M81934 g180172 Human cdc25B mRNA, complete cds. 0

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CTCTCAGTCCAGCAGGCGTGTGCGGTGGCGCCAGCGTCCGGGGCCACCTCCCGGG
CCTCCTGCTGGGATCTCATGGCCTCCTGGGGTCCCGGTGCGGGGGGCGGCTTCC
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GCAGCCGCTGACGCACCTATCCCTGTCTCGACGGGGATCCGAATCCTCCCTGTC
25 GTCTGAATCCTCCGAATCTTCTGATGCAGGTCTCTGCATGGATTCCCCCAGCCCTA
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45 GCCGAGAGCTTCTACTGAAGAGCCCCATCGCGCCCTGTAGCCTGGACAAGAGA
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292

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5 CACATCTCTGATACITTTTTTCATTATTGGTTGGGCTGAGCAGTCAGAAGACCTGGT
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10 CTTTATTGTAGCCTATTTTCTGCAGAGTTTCAGCTTTCTAAAATTACTCAATCTAA
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SEQ ID NO: 368

15 >3770 BLOOD 475174.21 S67970 g460902 ZNF75=KRAB zinc finger [Human, lung
fibroblast, mRNA, 1563 nt]. 0
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20 TGACTGTGGCCTTGCCCTCTGCTTGTCCTATTGCCTAGGACTCATAGTGTCCAGCA
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25 AAATATAGCCCATTTCTCTTTTAGAGTTTGTGACATTTGAAGATGTGGCTGTG
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SEQ ID NO: 369

>3787 BLOOD 256010.6 X63679 g37264 Human mRNA for TRAMP protein. 0

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SEQ ID NO: 370

>3790 BLOOD Hs.76252.gn|UG|Hs#S4668:H.sapiens mRNA for endothelin-1 receptor
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SEQ ID NO: 371

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SEQ ID NO: 372

35 >3951 BLOOD 344496.2 AF069765 g3243032 Human signal recognition particle 72
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5 SEQ ID NO: 374

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GCTGTTGCCTTATTAATGATTATCTTAAATTTCTCCTCATGGGGCAGCGTGGGCC
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CCATGAAGTTTAGTATTTGGTTGACATAGTGCTCTTCAAATTCATCCCATTACCCT
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GCTATTTGGGTTATGATGGGGCAAGATGGCAGAGGTATTGGGTTTTTTTGT
TCCATTCTCTCTACTTCTGTTTCCTAGCTTTTCTTTCTGGAGTTTAAGTACAGTG
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5 AAGTAAAAACAAGTGTGACTTCGAGGACCAAAGAAATTGTCAGCTATACATTTA
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AAGTGTTCCTATAAAGGTCTAATGTATCCACAGGCTGTTGTCTTATTAGTAAATG
CAAAGTAATGACTTTGTCTGTTTTACTCTAGTCTTTAGTACTTCAAAATTACCTTT
TCATATCCATGATCTTGAGTCCATTTGGGGGATTTTTAAGAATTTGATGTATTCA
10 ATACACTGTTCAAAATTAAATTGTTTAATTTTATGTATGAGTATGTATGTTCTGA
AGTTGGTCCTATTTAAATTATTAAGTATTGTAACCTTG

SEQ ID NO: 375

>4133 BLOOD 331022.43 U20938 g1926407 Human lymphocyte dihydropyrimidine
dehydrogenase mRNA, complete cds. 0

15 GAAAATGTATCCAAGGAAACATTTTATCATTA AAAAATTACCTTTAATTTTAATGC
TGTTTCTAAGAAAATGTAGTTAGCTCCATAAAGTACAAATGAAGAAAGTCAAAA
AATTATTTGCTATGGCAGGATAAGAAAGCCTAAAATTGAGTTTGTAGAAGCTTTAT
TAAGTAAAATCCCCTTCGCTGAAATTGCTTATTTTTGGTGTGGATAGAGGATAG
20 GGAGAATATTTACTAACTAAATACCATTCCTACTCATGCGTGAGATGGGTGTAC
AACTCATCCTCTTTAATGGCATTCTCTTTAACTATGTTTCTAACAAAATGAG
ATGATAGGATAGATCCTGGTTACCACTCTTTTGCTGTGCACATACGGGCTCTGAC
TGGTTTAAATAGTCACCTTCATGATTATAGGAACTAATGTTTGAACAAAGCTCAA
AGTATGCAATGCTTCATTATTCAAGAATGAAAAATATAATGTTGATAATATATAT
25 TAAGTGTGCCAAATCAGTTTGACTACTCTCTGTTTTAGTGTATGTTTAAAGAA
ATATATTTTTTGTATTATTAGATAATATTTTTGTATTTCTCTATTTTCATAATCAG
TAAATAGTGTATATAAACTCATTTATCTCCTCTTCATGGCATCTTCAATATGAAT
CTATAAGTAGTAAATCAGAAAGTAACAATCTATGGCTTATTTCTATGACAAATTC
AAGAGCTAGAAAAATAAAATGTTTCATTATGCACCTTTAGAAATGCATATTTGCC
30 ACAAACCTGTATTACTGAATAATATCAAATAAAATATCATAAAGCATTTT

SEQ ID NO: 376

>4152 BLOOD 399962.1 AL137305.g6807770 Human mRNA; cDNA DKFZp434J197
(from clone DKFZp434J197). 3e-09

35 GCCTCGGTGTTCCACCTAGGGGCGGGCAGCCAGGGGCACTTCCGCTGGCCCAA
GTGATCTGCATGTGGCAGGGCTGCGCAGTGTGAGCGGCCAGTGGGCAGGATGAC
GAGCCAGACCCCTCTGCCCCAGTCCCCCGGGCCAGGCGGCCGACGATGTCTACT
GTTGTGGAGCTGAACGTCGGGGGTGAGTTCCACACCACCCTGGGTACCCTGA
GGAAGTTTCCGGGCTCAAAGCTGGCAGAGATGTTCTCTAGCTTAGCCAAGGCCTC
40 CACGGACGCGGAGGGCCGCTTCTTCATCGACCGCCCCAGCACCTATTTAGACCC
ATCCTGGACTACCTGCGCACTGGGCAAGTGCCACACAGCACATCCCTGAAGTGT
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GCCACAGATCTTTGGTGAGCATGGTGTCTCGGAAGCAGTTTTTGCTGCAAGTGCC
GGGCTACAGCGAGAACCTGGAGCTCATGGTGCCTGGCACGTGCAGAAGCCAT
45 AACAGCACGGAAGTCCAGCGTGCTTGTGTCTGTTGGTGGAACTGAGGAGCAGGAT
GCATATTATTCAGAGGTCCTGTGTTTTCTGCAGGATAAGAAGATGTTCAAGTCTG
TTGTCAAGTTTGGGCCCTGGAAGGCGGTCTAGACAACAGCGACCTCATGCACTG
CCTGGAGATGGACATTAAGGCCAGGGGTACAAGGTATTCTCCAAGTTCTACCTG
ACGTACCCCAACAAAAGAAACGAATTCCATTTTAACATTTATTCATTCACCTTCA

CCTGGTGGTGATCCTCAGGAGCAGAGACTGTTATGAATTCTGGCGTGGCTTATGA
 AATTAAAAGTTGCCATCAAAGCCATTTTCTTTTAATTTACAAACATCAGGCAAT
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 TCCACTCCATTGCAACTGATGCCACTATATTTGCCTAGCAACTTGCAGCTACTTCC
 5 TTTTCAAAGCCTCATGTATCTCCCAGACCCTTCTCTTGAAGTCCAATAACAAGAC
 CAAGTAAGAATGTTTCAACAATGCGTTGGCAAGAGATGTGAGATGACAACAGGA
 ACATACAAGATACTGTGAATCTAGATGTTCTGACCTAAAGATGTAGTCTACATAG
 CCCCAGCTTGGGGTCCAATCCATCTGTCCCTGGCATGTGCCTTCATGTAGTAGGT
 GCTTTCCTGATCCCCCTTTGCGAGATGCTGTGGGTGCTAACACCTCAGAGCTGTCCT
 10 CTTCTCTAGAGTGGAGGTTTTCAAAGTGCATCATCAGCATTACCTGTGAACTTGC
 TGGAAATACAAATCCTCAGGCCCCACCTCAGACCTACTGAATCAGAATCTCTGGG
 GGTGGGACACAGCATTCTGATTTACCAAACCCTCCAAGTGATTTTGATGTATTCT
 AATTTTGAGACCATCTCTAGAAAAGAATTGCTACCTCTTGTATGGAGGTACAAAA
 GACTGACCTCTTACATCAAGGAACCTTCCCTTTCCCAGAGCTCCTCATGGAATCAAG
 15 CTGAAGTCAGTCTTCTTCTGAGAGCACATTCTTACTCAGTTTTTTTCTCTGTCT
 ACGCTGCTTCCCTCACTCCCCCTTCTCCTAAGAGCACTCCATCAATAAACCACTTGC
 ACGAG

SEQ ID NO: 377

20 >4181 BLOOD 350387.28 Z27113 g415387 Human gene for RNA polymerase II subunit
 14.4 kD. 0

GGGTTACGGCGCAGGCGCAAGATAAGCTAGGAGCCGCGCGAGTCGTAGTGTTCG
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 TGTCATGTCAGACAACGAGGACAATTTTGATGGCGACGACTTTGATGATGTGGAG
 25 GAGGATGAAGGGCTAGATGACTTGGAGAATGCCGAAGAGGAAGGCCAGGAGAA
 TGTCGAGATCCTCCCCTCTGGGGAGCGACCGCAGGCCAACCAGAAGCGAATCAC
 CACACCATAACATGACCAAGTACGAGCGAGCCCGCGTGCTGGGCACCCGAGCGCT
 CCAGATTGCGATGTGTGCCCTGTGATGGTGGAGCTGGAGGGGGAGACAGATCC
 TCTGCTCATTGCCATGAAGGAACTCAAGGCCCGAAAGATCCCCATCATCATTTCG
 30 CGTTACCTGCCAGATGGGAGCTATGAAGACTGGGGGGTGGACGAGCTCATCATC
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 ACTTTATATGTGTAAATAATAAAATATTCAACTTTCCAAAAAAAAAAAAAAAAAGGG

SEQ ID NO: 378

35 >4191 BLOOD Hs.171495 gn|UG|Hs#S4798 Human hap mRNA encoding a DNA-binding
 hormone receptor /cds=(321,1667) /gb=Y00291 /gi=32025 /ug=Hs.171495 /len=2972
 CGGGGTAGGATCCGGAACCCATTCCGAAGGCTTTTGGCAAGCATTACTTGGAAG
 GAGAACTTGGGATCTTTCTGGGAACCCCCCGCCCCGGCTGGATTGGCCGAGCAA
 GCCTGGAAAATGGTAAATGATCATTGGATCAATTACAGGCTTTTAGCTGGCTTG
 40 TCTGTCATAATTCATGATTCCGGGGCTGGGAAAAAGACCAACAGCCTACGTGCCA
 AAAAAGGGGCAGAGTTTGATGGAGTTGGGTGGACTTTTCTATGCCATTTGCCTCC
 ACACCTAGAGGATAAGCACTTTTGCAGACATTCAGTGCAAGGGAGATCATGTTTG
 ACTGTATGGATGTTCTGTCACTGAGTCTGGGCAAATCCTGGATTTCTACACTGC
 GAGTCCGTCTTCTGTCATGCTCCAGGAGAAAGCTCTCAAAGCATGCTTCAGTGGA
 45 TTGACCCAAACCGAATGGCAGCATCGGCACACTGCTCAATCAATTGAAACACAG
 AGCACCAGCTCTGAGGAACTCGTCCCAAGCCCCCATCTCCACTTCTCCCCCTC
 GAGTGTACAAACCCTGCTTCGTCTGCCAGGACAAATCATCAGGGTACCACTATGG
 GGTGAGCGCCTGTGAGGGATGTAAGGGCTTTTTCCGCAGAAGTATTCAGAAGAA
 TATGATTTACACTTGTCACCGAGATAAGAACTGTGTTATTAATAAAGTCACCAGG

AATCGATGCCAATACTGTCGACTCCAGAAGTGCTTTGAAGTGGGAATGTCCAAA
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ATGCACAGAGAGCTATGAAATGACAGCTGAGTTGGACGATCTCACAGAGAAGAT
CCGAAAAGCTCACCAGGAACTTTCCCTTCACTCTGCCAGCTGGCTAAATACACC
5 ACGAATTCCAGTGCTGACCATCGAGTCCGACTGGACCTGGGCCTCTGGGACAAAT
TCAGTGAAGTGGCCACCAAGTGCATTATTAAGATCGTGGAGTTTGCTAAACGTCT
GCCTGGTTTCACTGGCTTGACCATCGCAGACCAAATTACCCTGCTGAAGGCCGCC
TGCTGGACATCCTGATTCTTAGAATTTGCACCAGGTATACCCCAAGACA
CCATGACTTTCTCAGACGGCCTTACCCTAAATCGAACTCAGATGCACAATGCTGG
10 ATTTGGTCTCTGACTGACCTTGTGTTACCTTTGCCAACCAGCTCCTGCCTTTGG
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GGAAGCACTAAAAATTTATATCAGAAAAAGACGACCCAGCAAGCCTCACATGTT
TCCAAAGATCTTAATGAAAATCACAGATCTCCGTAGCATCAGTGCTAAAGGTGCA
15 GAGCGTGTAATTACCTTGAAAATGGAAATTCCTGGATCAATGCCACCTCTCATTC
AAGAAATGATGGAGAATTCTGAAGGACATGAACCCTTGACCCCAAGTTCAAGTG
GGAACACAGCAGAGCACAGTCCTAGCATCTCACCAGCTCAGTGGAACACAGTG
GGGTCAGTCAGTCACCACTCGTGCAATAAGACATTTTCTAGCTACTTCAAACATT
CCCCAGTACCTTCAGTTCAGGATTTAAAATGCAAGAAAAAACATTTTACTGCT
20 GCTTAGTTTTTGGACTGAAAAGATATTAATACTCAAGAAGGACCAAGAAGTTTTT
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TCCAATTTTAAAAAATCAGCCATTTTCATGCAACCAAGAACTAGTTAAAAGCTTCT
ATTTTCCTCTTTGAACAGCTCAAGATGCATGGCAAGACCCAGTCAAAATGATTTA
CCCCCTGGTTAAGTTTCTGAAGACTTTGTACATACAGAAGTATGGCTCTGTTCTTTC
25 TATACTGTATGTTTGGTGCTTTTCCTTTTGTCTTGCTACTCAAATAACCATGACA
CCAAGGTTATGAAATAGACTACTGTACACGTCTACCTAGGTTCAAAAAGATAACT
GTCTTGCTTTTCATGGAATAGTCAAGACATCAAGGTAAGGAAACAGGACTATTGA
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30 TTGCCAGTAAAAGTATACAAATTCCTTGCACTAGCAGAAGAGAATTCTGTATCA
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35 GGCTGGTCTACCACTGGACCATGTAAGTCTAGTGTCTTCTGATTTCATGCCTGAT
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40 TTCACTGGCTCTGTTTGTACATTGAGATTGTTTGTGTTAACAATGCTTTCTATGTTT
ATATACTGTTTACCTTTTCCATGGACTCTCCTGGCAAAGAATAAAATATATTTAT
TTT

SEQ ID NO: 379

45 >4215 BLOOD 237648.6 AF006305 g2213931 Human 26S proteasome regulatory subunit
(SUG2) mRNA, complete cds. 0
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GTCTTCCACCAGCTGCTTGAAGGTGGGTCTCTGTGAGGGCACTGCATGCCAGCAG
TCCCGCATCATCATGTACAGCTCGTTGGTGCAGTTACTGGGCTTCTCATCATGGC

GGACCCTAGAGATAAGGCGCTTCAGGACTACCGCAAGAAGTTGCTTGAACACAA
GGAGATCGACGGCCGCTCTTAAGGAGTTAAGGGAACAATTAAGAAGCTTACCAA
GCAGTATGAAAAGTCTGAAAATGATCTGAAGGCCCTACAGAGTGTTGGGCAGAT
CGTGGGTGAAGTGCTTAAACAGTTAACTGAAGAAAAATTCATTGTTAAAGCTACC
5 AATGGACCAAGATATGTTGTGGGTTGTCGTCGACAGCTTGACAAAAGTAAGCTG
AAGCCAGGAACAAGAGTTGCTTTGGATATGACTACACTAACTATCATGAGATATT
TGCCGAGAGAGGTGGATCCACTGGTTTATAACATGTCTCATGAGGACCCTGGGA
ATGTTTCTTATTCTGAGATTGGAGGGCTATCAGAACAGATCCGGGAATTAAGAGA
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10 CCTCCAAAAGGCTGTTTGTATATGGACCACCAGGTACGGGAAAAACACTCTTG
CACGAGCCGTTGCTAGCCAGCTGGACTGCAATTTCTTAAAGGTTGTATCTAGTTC
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TATGCTAGAGATCATCAACCATGCATCATTTTTATGGATGAAATAGATGCTATTG
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15 AATGGAGTTACTGAATCAAATGGATGGATTGATACTCTGCATAGAGTTAAAATG
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GATTAGATAGAAAAATACATATTGATTTGCCAAATGAACAAGCAAGATTAGACA
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20 TGAAGCAGGTATGTTTCGCAATTCGTGCTGATCATGATTTTGATGACAGGAAGAC
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GACTACAAACCTGTGTAATTTACTGTAAGATTTTGTATGGCTGCATGACAGATGT
TGGCTTATTGTAAAAATAAAGTTAAAGAAAATAATGTATGTATTGGTAATGATGT
CATTAAGTATATGAATAAAATATGAGTAACATCATAAAAATTAGTAATTCA
25 ACTTTTAAGATACAGAAGAAATTTGTATGTTTGTTAAAGTTGCATTTATTGCAGC
AAGTTACAAAGGGAAAGTGTGTAAGCTTTTCATATTTGCTGCGTGAGCATTTTGT
AAAATATTGAAAGTGGTTTGAGATAGTGGTATAAGAAAGCATTTCTTATGACTTA
TTTTGTATCATTTGTTTTCTCATCTAAAAAGTTGAATAAAATCTGTTTGATTGAG
TTCTCCTACAAAAAAGTCATAAGAAATGCTTTCTTATACCACTATCTCAAACCA
30 CTTTCAATATTTTACAAAATGCTCACGCAGCAAATATGAAAAGCTTCAACACTTT
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TATCTTAAAGTTGAATTACTAATTTTAA

SEQ ID NO: 380

35 >4222 BLOOD 1099671.1 X71901 g483524 Human ERF-1 mRNA 3' end. 0
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GCCAAAACGGCGCAGCGTGACAAGCCATATGTTCCACTCCGGTGGGGGCGAGAG
AGAAGCAACAATAAGTTAAAAGTGCCGCTCCCTCCACCTCTTTACCTTCATTCT
40 TACCAAAGTAACCTTTTTTTCATTGTTCTAGAGTCTTGAGGTGTGTGTGGGGAGGA
TGGAGGAGGAGGGAGGGTTGTGGCGCCGCCAGAAATTCGGAGCGCGCGTGGA
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45 GCGCCCCCACC CGCCACACCCGGAGAGCGCCGGCTGCAAAGCGAGCGCGAGT
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ACATGACAACAAGAACCCCGGAGGGGAGTGGAATGAGTGACGTCACAGCCGCGCT
5 CTGAGGCTGACAAAGGAGGGGGCGCGCCCTCCCGCTCTGCGCCCGCGCGGCC
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10 CAATCAACTTCTTTTTCTCCTCTTCTCATTTAAATAAGTTTAAAGCTCCTCCTCC
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40 TGTGCCCTCCCTCTCCCCCTCATAACCCACCTAACATAAGGACAAGTCAATTTG
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45 GAGGGCACCCGTGGGCCTCCCGGAGCCTCTGCCCATGGCGGGGTGGAGACCCGG
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CCGCACACTTATTCCTCCTCCCCTCTTCCCGGTGGCACCTCTCCACCTGTACCCGC
CCCCGCCCCACCACCCCGGCCCTTGGAAGAGTTGTTGCCAGACCAGGGTTTTGG
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5 AGAGAAAAGCTAAAAAAAAGTAAGGGGTGAGCAGTTAATGGTATTCATTC
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15 ACTGCAAATTGAGTTTCTTTCTCTTTAGGCCTTTCACAACTAGGACTGAGAATGTA
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20 TCTTGCTGGTCACTACCGTCGCTTTCTATTTCTCTTTCTTTGTGTGAATTTATTAA
AAGAAAAAAAACCTTTTGTAAACGACTATTTGCAGTTTAAAAATCAATAAACCCC
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SEQ ID NO: 381

25: >4336 BLOOD 992306.1 X51521 g31282 Human mRNA:for ezrin. 0:

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35 TCACACATGCCACTATGAGCTTTCAGACTCCAGCTGTGAAGAGACTCTGTTTGCT
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TCACAGCTAAGATGCCATGTGCAGGTGGATTCCATGCCGCAGACATGAAATAAA
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40

SEQ ID NO: 382

>4365 BLOOD 198264.2 D42039 g577290 Human mRNA for KIAA0081 gene, partial cds.
0

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TGCTGCTGCTGCTACTGCTACCACCGCCTGGGTCCTGCGCGGCCGAAGGCTCGCC
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5 ACGTCCAGAGGTTCAATTGTGGGATCAGACCGTGCTATCTTCATGCTTCGCGATGG
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10 GGGGCAGCAGTGACGCGCTGTGGGGGGACAGGTGGACGTGGAGAGCTCTTTGCC
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15 CATTTACACTTGGTGAGTCATCAACTCTACTGAGATTCCACTCCCCTCCAAGCAC
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SEQ ID NO: 383

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SEQ ID NO: 384

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30 SEQ ID NO: 385

>4374 BLOOD 231109.2 AF133423 g6434899 Human tetraspanin TM4-A mRNA, complete cds. 0

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SEQ ID NO: 386

>4379 BLOOD 234480.12.X76648 g531404 Human mRNA for glutaredoxin. 0

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SEQ ID NO: 387

>4400 BLOOD 331689.11 L36870 g685175 Human MAP kinase kinase 4 (MKK4) mRNA,
complete cds. 0

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SEQ ID NO: 389
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SEQ ID NO: 390

5 >4415 BLOOD 347990.5 D87465 g1665814 Human mRNA for KIAA0275 gene, complete
cds. 0

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SEQ ID NO: 391

>4435 BLOOD Hs.278634 gn|UG|Hs#S417730 Human mRNA for KIAA0146 gene, partial

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SEQ ID NO: 392
 >4460 BLOOD 021654.1 U32849 g1322219: Human Nimi mRNA, complete cds. 9
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SEQ ID NO: 393

4472.BLOOD.993722.2.X51818.g181036.Human:carbonyl reductase mRNA, complete cds.

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SEQ ID NO: 394

>4545 BLOOD 234816.2 M31158 g189980 Human cAMP-dependent protein kinase subunit RII-beta mRNA, complete cds. 0

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SEQ ID NO: 396

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SEQ ID NO: 397

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45 AGGAATGAGCACTAGACCGCCTGTCCCAAGGGAGCCTCAGTGGGGCGACAGGG
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GGTGCATCTCTTTCTTACTAACTGGTATTTATTAAGGCAGGTGCTCTGTAGGTCTG
GAGCCTTTCCCTCATCCTTTTTCGAGTCCCCACNNNNNNNNNNNNNNNNNNNN
NNNGAGGCTCACTAGAGGACGCAGAACCTTGGGAGATTGATTGACAGAACT

CCCCACCTCCCACCTTTTACAATTTCCAGTTTCTGATTGAAAATTTTAGGGTTTCTC
 CCCACTGCCCTTCCCTATCTTTCCTTCCCCTCAACACCATGAAGGAAAAACACAC
 ACGGCAGGGCTTTTGTAGCCCTGAAGGCAACTTTAGACATTTAAAATCCAGCAC
 TTTAATCTCTTGTTCTCTGTGAATCACTATGAGAAGTGAATGGTTTTAAAGGCTGT
 5 AATGCTATGTTGGAAATTGGTTTTGTTTTGCCTTTTATTGAAAAGGTAAGATCATGT
 GATTGGAAGAACACAACCTGTTGGCTTGGGAAGAGGACTTTGCTGCTGAAGTGTTT
 TCTACCTTCTGAGTGTGTTTAAGGCAGGATTTGGAGGGAAGGACCAGCTTAGGGA
 GAGTGTCTGAGCCACAGCGTCAGGATGGGGGAAACCACATGGGATCCATCAAGT
 TCCAGTTGAACAGGAGCAAGATCAGAACTTAGGAGGGCAGTGTGAGCTCCCTTG
 10 TTGGCTGTCAAGGAACACCGATCTAGTAGAAACCCACTTGGTTGTGACCCAGGTA
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 15 GTGCAGGGTGCCTATTGTGACAGGACACAAATGTTACTATGTTTTAATTTGCTAT
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 20 TTGAAACTAGTTTTTCATATCTTAGATTCAAGTTGTGTATGATTTAATGTCCCTTAT
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 25 AAAATGGCTGCAGAGCAGACACAGGATGAATTTGAACCTGACACAGGATGAATT
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 30 ACTTTTTTGTGGTAACTACCGAGATGAATATTTTAATTAGATAAGTTATATGAAA
 AGGAAAATTCCATGTCTAAATAANAAACAAACTCC

SEQ ID NO: 399

5061 BLGOD 211277.19 AF020351 g2655052 Human NADH:ubiquinone oxidoreductase
 18 kDa IP subunit mRNA, nuclear gene encoding mitochondrial protein, complete cds. 0
 35 CGTCCTTTCATCCTGGCGTTTGCCTGCAGCAAGATGGCGGCGGTCTCAATGTCAG
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 CCGTTTCCAGGGTCCGACCAGGTCGTTGAGGACTTCCACATGGAGATTGGCACA
 GGACCAGACTCAAGACACACAACCTCATAACAGTTGATGAAAAATTGGATATCAC
 40 TACTTTAACTGGCGTTCCAGAAGAGCATATAAAAAGTAGAAAAGTCAGGATCTTT
 GTTCCTGCTCGCAATAACATGCAGTCTGGAGTAAACAACACAAAGAAATGGAAG
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 TTTCTTTGCAGAAAAAAATGGATGGAGCTATGACATTGAAGAGAGGAAGGTTT
 45 CAAAACCCAAGTCCAAGTCTTATGGTGCAAACTTTTCTTGAACAAAAGAACA
 GAGTATCCACAAAATAGGTTGGCACTGACTATATCTCTGCTTGACTGTGAATAAA
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SEQ ID NO: 400

>5065 BLOOD 140122.18 AF125099 g5106993 Human HSPC038 protein mRNA, complete cds. 0

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GTGCTCCCGGCTCTCGTGTTCCTTCCTGAGCGGGTGGAGGAGGCCCAAGCGGT
GCTGGGCGCGCTCCCCCTTCCTTTCCTCCGGCGTCTCTCCCGGCCCTCTCGCGC
TGC ACTGTCTCTCCGACGCAAGACTGTCCCGGCCCGGATATGGCTCGTGGACAGC
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10 AAACAAGGACATGACCAAAAGGCTGCTGCCAAAGCTGCCTTAATATATACCTGC
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GTAACATACCTGCAGCTGCTTTTCTAACAACTGTTGATCAGCAAAAATAAAGGG
15 GCTACAGAAACACTCATTTTTATGCTGTTCCCTCTTGGGCTTCATGCAAAGACAA
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20 CATCAGCTAGAATTGCAAGTGCAATTCCTATATCCCTTTCTCTGCTCAGTGGCAG
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25 GATAGCTTCCTAAAAGCGGTTGGATTGT CAGTGAGCCCTTGTGAAAGGTTAGGTT
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30 TGTGGCTGGATTAATCCCAGAACCTCTCCCTCCTTTCTTTTCTAAGTGAGTTGT
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35 GTAAAACCTGCTGTTAACTCGGTTTAAATTTTTAAATTAATATAATAGAAAGACA
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GGGCTGATAGTTTCTTAGCAATTCCTATTCTTATGCCCTTACTTTAAAATAGTCCT
40 TTTATTTTGTGATTTTATTTCTTAAGTTTCAGATGTAATATCTGTTGTTTCCTAAC
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45 TTATAAGCAGCTGAAGACACCATATTTAACACTATATCTCAGTGATAGGGAAATA
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AGTACAATCCCCATTTTACTGTGTTTGAGTTAAAAACCAAACATCCCTGTAATTT
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GTCTTCAAAGACTTGATAAAATAACACTGAGAGAGAATTGGTCCATTGTATGCT

GTATTTCTATTACTTGCCAAAAGGAATGGGGTTAAGATTAAACTTGTTTCCATTCT
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5 SEQ ID NO: 401

>5083 BLOOD 1144730.1 AF059524 g4091867 Human reticulon gene family protein
(RTN3) mRNA, complete cds. 0

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TTCTATTTCCCCTCCCTCTCTCCCGCCCCGTATCTCTTTTCACCCTTCTCCCACCCT
10 CGCTCGCGTAGCCATGGCGGAGCCGTCGGCGGCCACTCAGTCCCATTCCATCTCC
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CATGCTGCTTTCCCTGGCAGCTTTCAGTGTATCAGTGGGGTTTCTTACCTCATCC
15 TGGCTCTTCTCTCTGTACCATCAGCTTCAGGATCTACAAGTCCGTCATCCAAGCT
GTACAGAAGTCAGAAGAAGGCCATCCATTCAAAGCCTACCTGGACGTAGACATT
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20 SEQ ID NO: 402

>5105 BLOOD 322303.2 X51602 g31431 Human flt mRNA for receptor-related tyrosine
kinase.0

GACCCAATGCATCACGTACCCCACTGGGGCCAGCCCTGCAGCCCAAAACCCAGGG
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25 GTCCTCTAGCAGGCCTAAGACATGTGAGGAGGAAAAGGAAAAAAGCAAAAAG
CAAGGGAGAAAAGAGAAAACCGGGAGAAAGGCATGAGAAAGAATTTGAGACGCAC
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30 CTAAAGCAAATTTTAGAACTTTACCTATGGAAGTGGTTCTATGTCCATTCTCATTC
GTGGCATGTTTTGATTTGTAGCACTGAGGGTGGCACTCAACTCTGAGCCATACT
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35 GAAAGAAAGCTGAGAAGAATGAAAATGCAGTCCTGAGGAGAGGAGTTTCTCCA
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40 GAGTAAAAAGGTGGTATGTAATTTATGCAAGGTATTTCTCCAGTTGGGACTCAGG
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CTTGCTGGGGTCTGAGCATGATGGGAATAGGGAGACAGGGTAGGAAAGGGCGC
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45 AGCCAGTCAGAAGCTGGAGAGGCAACAGTGGATTGCTGCTTCTTGGGGAGAAGA
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GAAGAGATGGGACCGTCATCAGCACATTCCCTAGTGAGCCTACTGGCTCCCTGGC
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CCACCAAGATCTAAATCCAAACAAAAGCAGGCTAGAGCCAGAAGAGAGGACAA
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TATAAATCAGGTAACCTGGAAGGAGGTTAAACACAGAAAAAAGAAGACCTCAGTC
AATTCTCTACTTTTTTTTTTTTTTCCAAATCAGATAATAGCCCAGCAAATAGTGAT
5 AACAAATAAAACCTTAGCTATTCATGTCTTGATTTCAATAATTAATTCTTAATCAT
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GTTACTCAGCTCCTTCAAACCTCAGGTTTGTAGCATACATGAGTCCATCCATCAGT
CAAAGAATGGTTCCATCTGGAGTCTTAATGTAGAAAGAAAAATGGGAGACTTGTA
ATAATGAGCTAGTTACAAAGTGCTTGTTTCATTAATAATAGCACTGAAAATTGAAAC
10 ATGAATTAACCTGATAATATTCCAATCATTTGCCATTTATGACAAAAATGGTTGGC
ACTAACAAAGAACGAGCACTTCCTTTCAGAGTTTCTGAGATAATGTACGTGGAAC
AGTCTGGGTGGAATGGGGCTGAAACCATGTGCAAGTCTGTGTCTTGTGAGTCCAA
GAAGTGACACCGAGATGTTAATTTTAGGGACCCGTGCCTTGTTTCCTAGCCCACA
AGAATGCAACATCAAACAGATACTCGCTAGCCTCATTTAAATTGATTAAAGGA
15 GGAGTGCATCTTTGGCCGACAGTNGTGTAAACNNNNNNNNNNNNNNNNNNNNNN
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AATTTTAAAGTTACTTTTATACAAACCAAGAATATATGCTACAGATATAAGACAG
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20

SEQ ID NO: 403

>5125 BLOOD GB_AA069517 gi|1576885|gb|AA069517|AA069517 zf74a12.s1
Soares_pineal_gland_N3HPG
Homo sapiens cDNA clone IMAGE:382654 3' similar to gb:J05252 NEUROENDOCRINE
25 CONVERTASE 2 PRECURSOR (HUMAN); mRNA sequence [Homo sapiens]
CATCTGCTGAGCGACCGGTCTTCACGAATCATTTTCTTGTGGAGTTGCATAAAGG
GGGAGAGGACAAAGCTCGCCAAGTTGCAGCAGAACACGGCTTTGGAGTCCGAAA
GCTTCCCTTTGCTGAAGGTCTGTACCACTTTTATCACAATGGCCTTGCAAAGGCA
AGTAGAAGACGCAGCCTACACCACAAGCAGCAGCTGGAGAGAGACCCAGGGT
30 AAAGATGGCTTTGCAGCAGGAAGGATTTGACCCGAAAAAANGCGAGGTTACAGA
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SEQ ID NO: 404

>5612 BLOOD 997231.12 D86198 g3062805 Human hDPM1 mRNA for dolichol-
35 phosphate-mannose synthase, complete cds. 0
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CTCGGCGGGAGCTGGAAGTGCGCAGTCCACGACAGAACAAATATTCGGTGCTTT
TACCTACCTACAACGAGCGCGAGAACCTGCCGCTCATCGTGTGGCTGCTGGTGAA
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40 CCCAGATGGAACAAGGGATGTTGCTGAACAGTTGGAGAAGATCTATGGGTCAGA
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5 TTATATTTCAAATTAAATAATTTTAAAGTTGCTGGCCTAATGAGCAATGTTCTCAA
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SEQ ID NO: 405

10 >5707 BLOOD 018945.3 AAC53540.1 g2739105 G protein-coupled receptor 2.6e-86
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ATCACCTCCACAAACAAAACCTCTTCGGAAATGGTAAAATAAGAAAATGCATGAT
TCTAGAGGCATTCTTAAGCACCCACGTGTCTGGGCTTTGTGGTGTCTGTGGTATCA
15 TCCGACCGTTTGGACTGGTTAGGGCTTACTGAGAGCTCCATTTCTGGAAAGCCTT
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CAGAAGCAATCTCTCTCCCCATCTTCGCATATTCTGATGGCAAAAACAAGTGGAAG
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25 AAATGGTTCTACCTGGACTTATGGGACTCTGACTTGCAAAGTGATTGCCTTTCTG
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30 CAACACCGCTCCTTCAGGGCTAATGATTCCTTAGGATTTATGCTGCTTCTTGCTCT
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40 GAAAATCCAGGTTACCAAGGGAACCTTACTGTGTTATATGAGGGAGCATCTGTA
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45 TAAGTTTCTTTATGTGGTCAAAAATAAGATAATGAAAGTAGCAGGTGCTAAGTAT
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SEQ ID NO: 406

>5710 BLOOD 024322.1 Incyte Unique

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5 CTAAGAAGCTGCTTTGAGCTCCTGGACTCACCTGAGGCTCCCTGGGGGATGACAC
TCAGTTCTGTCACTGTCAAGGATGCAGAGAGCTGGTGGTAGGTGGGAAGCATGG
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10 AATATTATTCAGCTGGTACTAACGACATTGTGCCAGCTGGGACTCTTGGGCTCT
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15 SEQ ID NO: 407

>5773 BLOOD 000873.5 AF224741 g6980069 Human chloride channel protein 7 (CLCN7)
mRNA, complete cds. 0

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20 GCGGCGCCGCTGCTGCGGAGGACGGCGCGGCCCGGCGGGGGGACGCCGCTGCTG
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25 GGAGCGGCGGATCAATCACACGGCCTTCCGGACGGTGGAGATCAAGCGCTGGGT
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40 GTGGGCGGTGTGCTTGGAGCAGTGTTCAATGCCTTGAACACTGGCTGACCATGT
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SEQ ID NO: 408

>5777 BLOOD 335198.1 X89066.1 g1370118 Human mRNA for TRPC1 protein. 0

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SEQ ID NO: 409

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SEQ ID NO: 410

>5824 BLOOD 228699.5 X92106 g1321857 Human mRNA for bleomycin hydrolase. 0

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35 SEQ ID NO: 411

>5836 BLOOD 343991.1 J02960 g178203 Human beta-2-adrenergic receptor gene, complete
cds. 0

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40 AAATTGTAAAATTGTATAGAGATATGCAGAAGGAAGGGCATCCTTCTGCCTTTT
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CCCATGACTTAATGTAGAATGATACAAGAATGACATGCACAGATTGCTTAACCCCT
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SEQ ID NO: 412

>5885 BLOOD 345860.21 X16832 g29709 Human mRNA for cathepsin H (EC 3.4.22.16). 0

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 15 GGCTGCAGACGTTTGCCAGCAACTGGAGGAAGATAAACGCCCACAACAATGGGA
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 25 GAGGAAGCGATGGTGGAGGCTGTGGCCCTCTACAACCCTGTGAGCTTTGCCTTTG
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 35 AACCACATGGACCACGAATATTCTTTCTGTCCAGAAGGGCTACTTTCCACATATA
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SEQ ID NO: 413

40 >5900 BLOOD 982889.1 Y00290 g36610 Human mRNA for steroid hormone receptor
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 45 CCATCCTCGGGCATTGATGCCCTCAGCCACCACAGCCCCAGCGGCTCGTCGGACG
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5 GAGACGGCTGGATTTCGGAGAACAGCCCCCTACCTGAGCTTACAGATTTCCCCGCCT
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20 CCTGCATCGGGGCTCTGAGCTGTCCCAGAAGAAGGGGTTTCTTGCTTCCTGGCCA
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25 GACCTGGAGGTACCTGGATGGGCAGGGCTTAGTGCCAGGGCCCAAGAGACTTA
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30 GCCAGCTGAGGTAACCTCCAGGACATGCACCTGGGAACTCGCTGGCTCAGAAAAG
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SEQ ID NO: 414

35 >5918 BLOOD 403530.1 M67439 g181830 Human D5 dopamine receptor (DRD5) gene,
complete cds. 0
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40 AGCAACGGCACCGCGTACCCGGGGCAGTTCGCTCTATACCAGCAGCTGGCGCAG
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45 TGGAAGGCAGTCGCCGAGGTGGCCGTTACTGGCCCTTTGGAGCGTTCTGCGACG
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ATCAGCGTGGACCGCTACTGGGCCATCTCCAGGCCCTTCCGCTACAAGCGCAAGA
TGACTCAGCGCATGGCCTTGGTCATGGTCGGCCTGGCATGGACCTTGTCCATCCT
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5 TGGAGAGGGCCGCAGAGCACGCGCAGAGCTGCCGGAGCAGCGCAGCCTGCGCG
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10 CACTCAACCCCGTCATCTATGCCTTCAACGCCGACTTTCAGAAGGTGTTTGCCCA
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15 TCCCCAGATGGTGACCCTGTTGCTGAGTCTGTCTGGGAGCTGGACTGCGAGGGGG
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20 GGCAGAAAGCAGTTGCAATAAACTCAGTCAAATGTACCCAGCCTACCAGAGATGG
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25 TTATGTCAATTTCTTCTCTGTGCTGGTGGGGGCCTCTTACCATAGCTTAAGAAG
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SEQ ID NO: 415

>5932 BLOOD gi|3928192|emb|X62421.1|HSDNAJ Homo sapiens mRNA for DnaJ protein
homologue

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AGCGGGCCTACCGCCGCCAGGCCTGCGCTACCACCCGGACAAGAACAAGGAGCC
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35 CCCGCGCAAGCGCGAGATCTTCGACCGCTACTTGGAGGAAGGCCTAAAGGGGAG
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45 TAAAGGACAAGCCCCACAATATCTTTAAGAGAGATGGCTCTGATGTCATTTATCC
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5 AGCTATAGGGCATCAGGTGGTGGGAACAGCAGGAAAAGGCATTCCAGTCTGCCC
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CTGGCTGGTAGATAATGTCAACCTGCAGTCTTGATTCCCAGACCCTGTACACTCC
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10 GCTCTTCTCCTGGA

SEQ ID NO: 416

>5934 BLOOD 197542.1 S37375 g32468 Human HSJ1 mRNA. 0

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20 AGGTCTTCCGGGAATTCTTTGGGAGTGGAGACCCTTTTGCAGAGCTCTTTGATGA
CCTGGGCCCCCTTCTCAGAGCTTCAGAACCGGGGTTCCCGACACTCAGGCCCTTC
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25 AAGTGGAGGAGGATGGGCAGCTGAAGTCAGTCACAATCAATGGTGTCCCAGATG
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35 ACCCCAGTGTGGACTTGGGATTTGCTGTGCTCAGCCCAGGGCTGATAGGTCCCTG
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40 AGAGTGGAGCCTCCTGCTCTCCTGGACCAGCTGCAGACCCCCAACCCTGGTTTCT
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 5 TACAAATCCCAGAGTGCGGTGTGCCCGGCCTCATTTCTGATAGATCCCGCTTGGG
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 CTTGCTAGCCCCAGGGTTAGAGTGGGCAGGGCAGAGCCGCGCAGCACCTGGGAG
 10 CGGTACCTTTCCCTTGGGCAGCCTGGGGTCCCAGGAACAAGCCAGGGCGAGTGG
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 15 CCTGCCTGGGGAGCCCAGTGGCCAGGGAGGGAGTGGTGGAGCCAGTCGCTGTAA
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SEQ ID NO: 417

20 >5950 BLOOD 337103.1 S54181 g35020 Human mRNA for neurotensin receptor. 0
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SEQ ID NO: 418

>5956 BLOOD Hs.92208 gnl|UG|Hs#S376155 Human metargidin precursor mRNA,
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10 GTCAGTGAGGGACACACTTTGGAGAACTGCTGCTACCAGGGAAGAGTGCGGGGA
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15 ACAGCGCCACATTCGCCGGAGGCGGGATGTGGTAACAGAGACCAAGACTGTGGA
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5 AAAAAA

SEQ ID NO: 419

>5982 BLOOD 410650.1 U59831 g1399236 Human transcription factor, forkhead related
activator 4 (FREAC-4) gene, complete cds. 0

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15 CTTGGGGACTCTGCACCAAGGGACTGCCCTGTCCAGTGTGAGAACTTTACTGCT
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30

SEQ ID NO: 420

>5987 BLOOD 220325.2 AF013988 g2318114 Human serine protease mRNA, complete cds.

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15 SEQ ID NO: 421

>6005 BLOOD 350249.10 U78180 g1871167 Human sodium channel 2 (hBNaC2) mRNA,
alternatively spliced, complete cds. 0

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SEQ ID NO: 422

>6009 BLOOD gi|2281751|gb|U79666.1|HSU79666 Homo sapiens alpha1A-voltage-
45 dependent calcium channel mRNA, splice form BI-1-Vi-GGCAAG, complete cds
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 40 GGGCTCCAGGAAGGGCCTGCACGAACCCTACAGCGAGAGTGACGATGATTGGTG
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SEQ ID NO: 423

45 >6010 BLOOD Hs.75794 gnl|UG|Hs#S2650864 Homo sapiens cDNA FLJ12746 fis, clone
 NT2RP2000842, highly similar to Human lysophosphatidic acid receptor homolog mRNA
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SEQ ID NO: 424

>6044 BLOOD 1089570.2 L35539 g577412 Human G-protein-coupled receptor (GPR1)

gene, complete cds. 0

5 GATAAAAGTGGAATGAGGAATGCAGCCGTTCTGAACACCACCCTCCATTTTCATTC
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TTAACTGATTTCTTCATTCTCCATTTAGCAAGGTCATGGAAGATTTGGAGGAAAC
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10 CGGGGTTCAAGTGGAAGAAGACAGTCACCACTCTGTGGTTCCTCAATCTAGCCAT
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SEQ ID NO: 425

>6051 BLOOD gi|762887|gb|U16953.1|HSU16953 Human potassium channel beta3 subunit

mRNA, complete cds

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25 GGAAACCACCAGAGCAGAGACGGGCATGGCATAACAGGAATCTTGAAAAATCAG
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30 TCTACTGGGGTGGAAGGCTGAAACAGAAAGAGGGCTGTCAAGAAAGCATATTA
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35 CCGGTCTGTGAACAAGCTGAGTACCATCTTTTCCAGAGAGAGAAAGTGAGGTC
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40 GATGCACACTACCTCAGCTAGCTGTTGCGTGGTGCCTGAGAAATGAAGGTGTGA
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45 TACTAACCAGTCTTTTGAATCACTTAGCAGCTTGCTGCAACCTCTAGTGCCCTCC
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SEQ ID NO: 426

>6117 BLOOD 197754.2 U67319 g1894912 Human Lice2 beta cysteine protease mRNA,
complete cds. 0

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15 ATTCAGTGGATGCTAAGCCAGACCGGTCCTCGTTTGTACCGTCCCTCTTCAGTAA
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SEQ ID NO: 427

>6121 BLOOD 138709.5 U40992 g6031211 Human heat shock protein hsp40 homolog

10 mRNA, complete cds. 0

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10

SEQ ID NO: 428

>6133 BLOOD 474194.5 M88279 g186389 Human immunophilin (FKBP52) mRNA,
complete cds. 0

15

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20

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SEQ ID NO: 429

>6157 BLOOD Hs.1613 gn||UG|Hs#S4015 H.sapiens mRNA for A2a adenosine receptor

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15 TGAGTAGCTGGGACCACAGGTGTGTGCCACCATCTCCAGCAGTTTGTGTTATTTAT
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AGAAGGGCTTGGGTTCTGAGGAAGCAGATGTTTCATGCTGTGAGGCCTTGCACCA
5 GGTGGGGGCCACAGCACCAGCAGCAGCATCTTTCTGGGCAGGCCAGCCCTCCA
CTGCAGAAGCATCTGGAAGCACCACCTTGTCTCCACAGAGCAGCTTGGGCACAG
CAGACTGGCCTGGCCCTGAGACTGGGGAGTGGCTCCAACAGCCTCCTGCCACCC
ACACACCACTCTCCCTAGACTCTCCTAGGGTTCAGGAGCTGCTGGGCCAGAGGT
GACATTTGACTTTTTTCCAGGAAAAATGTAAGTGTGAGGAAACCCCTTTTATTTT
10 ATTACCTTTCACTCTCTGGCTGCTGGGTCTGCCGTCGGTCCTGCTGCTAACCTGGC
AGCAGAGCCTCTGCCCCGGGGAGCCTCAGGCAGTCTCTCCTGCTGTCACAGCTGC
CATCCACTTCTCAGTCCCAGGGCCATCTCTTGAGTGACAAAGCTGGGATCAAGG
ACAGGGAGTTGTAACAGAGCAGTGCCAGAGCATGGGCCAGGTCCCAGGGGAG
AGGTTGGGGCTGGCAGGCCACTGGCATGTGCTGAGTAGCGCAGAGCTACCCAGT
15 GAGAGGCCTTGTCTAACTGCCTTTCCTTCTAAAGGGAATGTTTTTTCTGAGATAA
AATAAAAACGAGCCACATCGTGTTTAAAG

SEQ ID NO: 430

>6176 BLOOD 480902.3 X83860 g633213 Human mRNA for prostaglandin E receptor

20 (EP3c). 0
ACCAGAGGTTTCCCAGAGAGGAAGGCGTGGCTCCCTCCCGGGCCAGTGAGCCCT
GGCGCCGCGCGCGCCGCGGTCCAGCAGCGGAGTAGGGCGGCGGCTGGGCGGCGG
CACCATGGGGGGGAGGCCAGCCCCAGCGCGGTAAACGCCGACCTCCGCGGCGG
CCCGCGCCCGTCTGCGCCCTCCCGGTGGGGCTCTCTGGACGCCATCCCTCCTCAG
25 CTGGAAGCCAACATGAAGGAGACCCGGGGCTACGGAGGGGATGCCCCCTTCTGC
ACCCGCCTCAACCACTCCTACACAGGCATGTGGGCGCCCCGAGCGTTCGCGCGAG
GCGCGGGGCAACCTCACGCGCCCTCCAGGGTCTGGCGAGGATTGCGGATCGGTG
TCCGTGGCCTTCCCGATCACCATGCTGCTCACTGGTTTCGTGGGCAACGCACTGG
CCATGCTGCTCGTGTGCGCAGCTACCGGCGCCGGGAGAGCAAGCGCAAGAAGT
30 CCTTCCTGCTGTGCATCGGCTGGCTGGCGCTACCGACCTGGTCGGGCAGCTTCT
CACCACCCCGGTCGTCATCGTCGTGTACCTGTCCAAGCAGCGTTGGGAGCACATC
GACCCGTCGGGGCGGCTCTGCACCTTTTTTCGGGCTGACCATGACTGTTTTTCGGGC
TCTCCTCGTTGTTTCATCGCCAGCGCCATGGCCGTCGAGCGGGCGCTGGCCATCAG
GGCGCCGCACTGGTATGCGAGCCACATGAAGACGCGTGCCACCCGCGCTGTGCT
35 GCTCGGCGTGTGGCTGGCCGTGCTCGCCTTCGCCCTGCTGCCGGTGTGGGCGTG
GGCCAGTACACCGTCCAGTGGCCCCGGGACGTGGTGCTTCATCAGCACCGGGCGA
GGGGGCAACGGGACTAGCTCTTCGCATAACTGGGGCAACCTTTTCTTCGCCTCTG
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40 GTGCCAGTGGGGCCGCATCACGACCGAGACGGCCATTACAGCTTATGGGGATCA
TGTGCGTGTGTCGGTCTGCTGGTCTCCGCTCCTGATAATGATGTTGAAAATGAT
CTTCAATCAGACATCAGTTGAGCACTGCAAGACACACACGGAGAAGCAGAAAGA
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CTTGGGTTTACCTGCTGTAAAGAAAGATCCTTCTTCGAAAGTTTTGCCAGGTAGC
45 AAATGCTGTCTCAGCTGCTCTAATGATGGACAGAAAGGGCAGCCTATCTCATTA
TCTAATGAAATAATACAGACAGAAGCATGAAAGAAAACACTTAACCTTGCATGTG
CACAGCTTTTGGTAACAAATATCGCTAAACCTTACTGTGAATTTAGGCATCTCTG
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AATATATTAATAACAGTCTAGTGTTTTTGTGAGTCTGCCATTTCGTAGCTGAATAT
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GCGGGGATAGTTAATATTCCAGTACACTGAATACATGAGGAATTTAACCACATAC
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5 TCTTTCATTGCCTCTCTCGCTTTCTGTCACTTTTTTCCTCCTTACATTAAAGAAAAG
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10 TTTACATTTCTATGAGCCTAAGGAAGATTCATGAAACTGACCTATGAGAGTCGTG
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TTTAAATTCCAATACTGATTCCAAAACAAATAAATATTTTGAAGACTCAATGAAT
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15 GCTCTTCTGCCTGCTCCTCAAAGTGGCTCTATCTAAATATTTATTACTAAAATGTT
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20 TTTCTTGCACTGCTTTTCTAGTTTTTTAAAAGCTTGAGATTTATTTATACTTCTTGT
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25 TACTAAAATCTCTCTATGCCATAGAATTGGATTATCCTGTAGGTCATCTCATTGGG
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GAGGCAATGTGAATTTGAGTGGCATGAGCATGATTAGGTTATTCCTTCCAGCATC
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30 ATGAGCAGAAGTTTGCCAGGACAGTACACATTGGCAAGGCACATACCATATGAT
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35 AAAGGCCAAAAACCTGACACTTATTCCTTAACTGCAAAATTAAATTCCTGCCCAGGG
GATATATTTTAGGTGGGGATGAATGGCAGCTTTTGTGTTTTTTTAAACAAGCTTGA
AAGGGAGGTGGAAAACAAAGAAATTATGTAAATGGCATATGAGTTTTATTATCT
AGGCATTCGTTAGTATGGGGAAACCTGCATAAGCAACTGAAAATCCCAAATGAT
TTCAGCCTTTTCATGATGGTTGAGGTTAGATTTTCAAGAGATGTACAGAGACTAGAG
40 CGGTGGTTAGAAAGAGGATATATGTAGTCACAGCAGAAAGACGTGTCTAAGTTT
AATTTTATTGGCTTTCAAGTTCCTCATGTATACTTAGTTTGTCCATACATATGTC
TAATCAGGAAAAATGCATGTATAGATTATGACAATTCCTGAATTTTGAAGTATTG
GTTAAAAGACAATTAAAGGCCAAGAAAACCATGGTGGAAGAAGTAAGCGAATG
AAATGTAGAAATATATGTAAAATTAGCAAGTGTCAATTTTACCAAGTAGTGTGTA
45 TTTTCCAAACAATGAATTTATATACTATGCTGAGTCACAGAGAAGAATGATCACA
TGTTACTTAATGAGAGCAGTTTACTTTTTCAAATAAAAATAGGTATGATGAATGTCT
TAAAAATATCTTGAAGTTGAAGAAACAAAAATGAGTTATCTCAATATTTACCAAG
TTAACCTAGTGCTGTATATATCCCAAGATATTTTAGGTAAATGTAAGTGTTAATC
ATGCCAGATTTAAACTAGTCTGAAATATAGGGTATACATATATTTCTACTTACAT

TTCTTTATTTTATGAAATATCCGACCATGTTGCAGAAAATAATGCAAAACCTCAT
GTAAGTTAACTATGAAAGATCCTGTGAGCACATTGGCATTGAGTGACAGACAAA
CTAAAAACTGGCAAACAGTATTTTAATAAGGGGGTCACTCTGTGGCAGTATTCTA
ATATTGGATTTTCAAGTAGATTAGGCTTTTTATTTATTCAACGCTTTTTATAATTTT
5 GTTCTTTTTGACTCCAAATTATTGGTCAGCTTTCAACCTTCTCCACATCAGCAATC
ACTAATAGTTCTTTTGGTTGAGATCAACTCAGAA

SEQ ID NO: 431

>6204 BLOOD 350550.3 S74902 g984506 Human P2U nucleotide receptor mRNA,

complete cds. 0

10 GGGGAACAGCGCAGGGAGGTGGGTAGCCGGGCTCCCAGGCACGTGGGTCTCTGC
GGCTGCGGCGGGACCCGGGCACTGGCACCCGGGAGCGGCGGCGACGGCACCCCG
AGAGGAGAAGCGCAGCGCAGTGGCGAGAGGAGCCCCCTGTGGCAGCAGCACTA
CCTGCCCAGAAAAATGCTGGAGGCTGGGCGTGGCCCCAGGCCTGGGGACCTGTT
15 TTTCTGTTCCTCGCAGAGTTCCTGTCAGCCCGGTCCAGGTCCAGGCGTGTGCATT
CATGAGTGAGGAACCCGTGCAGGCGCTGAGCATCCTGACCTGGAGAGCAGGGGC
TGGTCAGGGCGATGGCAGCAGACCTGGGCCCCCTGGAATGACACCATCAATGGCA
CCTGGGATGGGGATGAGCTGGGCTACAGGTGCCGCTTCAACGAGGACTTCAAGT
ACGTGCTGCTGCCTGTGTCTACGGCGTGGTGTGCGTGTGCTGGGCTGTGTCTGAA
20 CGCCGTGGCGCTCTACATCTTCTGTGCCGCCTCAAGACCTGGAATGCGTCCACC
ACATATATGTTCCACCTGGCTGTGTCTGATGCACTGTATGCGGCCTCCCTGCCGCT
GCTGGTCTATTACTACGCCCGGGGGGACCACTGGCCCTTCAGCACGGTGGTCTGC
GAGCTGGTGGCGCTTCCTCTTCTACACCAACCTTACTGCAGCATCCTCTTCTCTAC
GCTGGCATCAGCGTGCACCGGTGTCTGGGCGTCTTACGACCTCTGCGCTCCCTGCGC
25 TGGGGGCCGGGCCCCGCTACGCTCGCCGGGTGGCCGGGGCCGTGTGGGTGTTGGTG
CTGGCCTGCCAGGCCCGCTGCTCTACTTTGTCAACCACCAGCGCGCGCGGGGGCC
GCGTAACCTGCCACGACACCTCGGCACCCGAGCTCTTCAGCCGCTTCGTGGCCTA
CAGCTCAGTCATGCTGGGCCTGCTCTTCGCGGTGCCCTTTGCCGTCATCCTTGCT
GTTACGTGCTCATGGCTCGGCGACTGCTAAAGCCAGCCTACGGGACCTCGGGCG
30 GCCTGCCTAGGGCCAAGCGCAAGTCCGTGCGCACCATCGCCGTGGTGTGCTGGCTGT
CTTCGCCCTCTGCTTCCTGCCATTCCACGTCACCCGCACCCTCTACTACTCCTTCC
GCTCGCTGGACCTCAGCTGCCACACCCTCAACGCCATCAACATGGCCTACAAGGT
TAACCGGCCGCTGGCCAGTGCTAACAGTTGCCTTGAGCCCGTGCTCTACTTCCTG
GCTGGGCAGAGGCTCGTACGCTTTGCCCGAGATGCCAAGCCACCCACTGGGCCC
35 CAGCCCTGCCACCCCGGCTCGCCGAGGCTGGGCCTGCGCAGATCCGACAGAAC
TGACATGCAGAGGATAGAAGATGTGTTGGGCAGCAGTGAGGACTCTAGGCGGAC
AGAGTCCACGCCGGCTGGTAGCGAGAACACTAAGGACATTCCGGCTGTAGGAGCA
GAACACTTCAGCCTGTGCAGGTTTATATTGGGAAGCTGTAGAGGACCAGGACTTG
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40 CCCATGCTCCGTCAATTTGACAGGGGCTCAGGATATTCACTCTGTGGTCCAGAGTC
AACTGTTCCATAACCCCTAGTCATCGTTTGTGTGTATAAGTTGGGGGAATTAAG
TTTCAAGAAAGGCAAGAGCTCAAGGTCAATGACACCCCTGGCCTGACTCCCATG
CAAGTAGCTGGCTGTACTGCCAAGGTACCTAGGTTGGAGTCCAGCCTAATCAAGT
CAAATGGAGAAACAGGCCCAGAGAGGAAGGTGGCTTACCAAGATCACATACCA
45 GAGTCTGGAGCTGAGCTACCTGGGGTGGGGGCCAAGTCACAGGTTGGCCAGAAA
ACCTTGTAAGTAATGAGGGCTGAGTTTGCACAGTGGTCTGGAATGGACTGGGT
GCCACGGTGGACTTAGCTCTGAGGAGTACCCCGAGCCCAAGAGATGAACATCTG
GGGACTAATATCATAGACCCATCTGGAGGCTCCCATGGGCTAGGAGCCAGTGTG
AGGCTGTAACCTATACTAAAGGTTGTGTTGCCTGCTGAAAAAAA

SEQ ID NO: 432

>6217 BLOOD gi|535478|gb|U12512.1|HSU12512 Human bradykinin receptor B1 subtype mRNA, complete cds

5 CTGTGCATGGCATCATCCTGGCCCCCTCTAGAGCTCCAATCCTCCAACCAGAGCC
AGCTCTTCCCTCAAAATGCTACGGCCTGTGACAATGCTCCAGAAGCCTGGGACCT
GCTGCACAGAGTGCTGCCGACATTTATCATCTCCATCTGTTTCTTCGGCCTCCTAG
GGAACCTTTTTTGTCTGTTGGTCTTCCTCCTGCCCCGGCGGCAACTGAACGTGGC
AGAAATCTACCTGGCCAACCTGGCAGCCTCTGATCTGGTGTGTTGTCTTGGGCTTG
10 CCCTTCTGGGCAGAGAATATCTGGAACCAGTTTAACTGGCCTTTCGGAGCCCTCC
TCTGCCGTGTCAACGGGGTCAACAGGCCAATTTGTTTCATCAGCATCTTCCT
GGTGGTGGCCATCAGCCAGGACCGCTACCGCGTGCTGGTGCACCCTATGGCCAG
CGGAAGGCAGCAGCGGGCGGAGGCAGGCCCGGGTACCTGCGTGCTCATCTGGGT
TGTGGGGGGCCTCTTGAGCATCCCCACATTCTGCTGCGATCCATCCAAGCCGTC
15 CCAGATCTGAACATCACCGCCTGCATCCTGCTCCTCCCCCATGAGGCCTGGCACT
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CGTCTTCTTCAACTACCACATCCTGGCCTCCCTGCGAACGCGGGAGGAGGTCAGC
AGGACAAGAGTGCGGGGGCGGAAGGATAGCAAGACCACAGCGCTGATCCTCAC
GCTCGTGGTTGCCTTCTGGTCTGCTGGGCCCCCTTACCACTTCTTTGCCTTCTGG
20 AATTCTTATTCAGGTGCAAGCAGTCCGAGGCTGCTTTTGGGAGGACTTCATTGA
CCTGGGCCTGCAATTGGCCAACCTTCTTTGCCTTCACTAACAGCTCCCTGAATCCA
GTAATTATGCTTTGTGGGGCCGGCTCTTCAGGACCAAGGTCTGGGAACTTTATA
AACAATGCACCGCTAAAGTCTTGCTCCAATATGTTTCATCCCATAGGAAAGAAAT
CTTCCAACCTTTTCTGGCGGAATTAAACAGCATTGAACCT

SEQ ID NO: 433

>6227 BLOOD gi|182389|gb|M57285.1|HUMFACX Human coagulation factor X (F10) mRNA, complete cds

ATGGGGCGCCCACTGCACCTCGTCCTGCTCAGTGCCTCCCTGGCTGGCCTCCTGC
30 TGCTCGGGGAAAGTCTGTTCATCCGCAGGGAGCAGGCCAACAACATCCTGGCGA
GGGTACGAGGGCCAATTCTTTCTTGAAGAGATGAAGAAAGGACACCTCGAAA
GAGAGTGCATGGAAGAGACCTGCTCATAACGAAGAGGCCCGCGAGGTCTTTGAGG
ACAGCGACAAGACGAATGAATTCTGGAATAAATACAAAGATGGCGACCAGTGTG
AGACCAGTCTTGCCAGAACCAGGGCAAATGTAAGACGGCCTCGGGGAATACA
35 CCTGCACCTGTTTAGAAGGATTGCAAGGCCAAAACTGTGAATTATTCACACGGA
AGCTCTGCAGCCTGGACAACGGGGACTGTGACCAGTTCTGCCACGAGGAACAGA
ACTCTGTGGTGTGCTCCTGCGCCCGCGGGTACACCCTGGCTGACAACGGCAAGGC
CTGCATTCCACAGGGCCCTACCCCTGTGGGAAACAGACCCTGGAACGCAGGAA
GAGGTCAGTGGCCAGGCCACCAGCAGCAGCGGGGAGGCCCCTGACAGCATCAC
40 ATGGAAGCCATATGATGCAGCCGACCTGGACCCCAACGAGAACCCTTCGACCT
GCTTGACTTCAACCAGACGCAGCCTGAGAGGGGCGACAACAACCTCACCAGGAT
CGTGGGAGGCCAGGAATGCAAGGACGGGGAGTGTCCCTGGCAGGCCCTGCTCAT
CAATGAGGAAAACGAGGGTTTCTGTGGTGGAACCTATTCTGAGCGAGTTCTACATC
CTAACGGCAGCCCACTGTCTCTACCAAGCCAAGAGATTCAAGGTGAGGGTAGGG
45 GACCGGAACACGGAGCAGGAGGAGGGCGGTGAGGCGGTGCACGAGGTGGAGGT
GGTCATCAAGCACAACCGGTTCAAAAGGAGACCTATGACTTCGACATCGCCGT
GCTCCGGCTCAAGACCCCATCACCTCCGCATGAACGTGGCGCCTGCCTGCCTC
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AGCGGCTTCGGGCGCACCCACGAGAAGGGCCGGCAGTCCACCAGGCTCAAGATG

CTGGAGGTGCCCTACGTGGACCGCAACAGCTGCAAGCTGTCCAGCAGCTTCATCA
TCACCCAGAACATGTTCTGTGCCGGCTACGACACCAAGCAGGAGGATGCCTGCC
AGGGGGACAGCGGGGGCCCGCACGTCACCCGCTTCAAGGACACCTACTTCGTGA
CAGGCATCGTCAGCTGGGGAGAGGGCTGTGCCCGTAAGGGGAAGTACGGGATCT
5 ACACCAAGGTCACCGCCTTCCTCAAGTGGATCGACAGGTCCATGAAAACAGGG
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SEQ ID NO: 434

10 >6233 BLOOD 988660.1 L33930 g500848 Human CD24 signal transducer mRNA, complete
cds and 3' region. 0

CCTTTCCTCTGCGGCGGGCCGAGAGATAACCCTGCCCCGAGGGGTCCCGGCGCCCCG
CCCCCACGCGGTGCGACTGGAATTGCGAGCCCCCTCTCGGGTCCCGGGGCGCAT
TTTGCAGTCTGAGTGGCAATGCACTTGCTCCAGGACAGGCGGCTACCCCGCCGCA
15 GCGAGGCGCGGACTTTTCTTTTGGGGGGTTTCGCCGGCTCGCCGCGCTCCCCACCT
TGCTTGCGCCCGCCCGGAGCCAGCGGTTCTCCAAGCACCCAGCATCCTGCTAGAC
GCGCCGCGCACCGACGGAGGGGACATGGGCAGAGCAATGGTGGCCAGGCTCGG
GCTGGGGCTGGCTGCTGCTGGCACTGCTCCTACCCACGCAGATTTATTCCAGTGA
AACAACAACCTGGAACCTCAAGTAACTCCTCCAGAGTACTTCCAACCTCTGGGTTG
20 GCCCCAAATCCAATAATGCCACCACCAAGGCGGCTGGTGGTGGCCTGCAGTCA
ACAGCCAGTCTCTTCGTGGTCTCACTCTCTCTTCTGCATCTCTACTCTTAAGAGAC
TCAGGCCAAGAAACGTCTTCTAAATTTCCCATCTTCTAAACCCCAATCOAAATGG
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25 AGAACATGTGAGAGGTTTGACTAGATGATGGATGCCAATATTAATCTGCTGGA
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TCCTTGAATGTGGCTTGAGAAATATGGACACTTAATACTACCTTGAAAATAAGAA
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30 TGTACATGAGAAGGAACTTCCAGGTGTTACTGTAATTCCTCAACGTATTGTTTCG
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TGCATTTGACCTTTTATGTAGTAATTGACATGTGCCAGGGCAATGATGAATGAGA
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35 AATGGTAGGCATTTCCCTATCACCTGTTTCCATTCAACAAGAGCACTACATTCATTT
AGCTAAACGGATTCCAAAGAGTAGAATTGCATTGACCACGACTAATTTCAAANN
NN
NN
NN
40 NNN
NN
NN
NNNTATTTCTGCATATGTTTGAATACTTTTACAATTTAAAAAAATGATCTGTTT
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45 ACTATAAATCAAGTATTTGGGAAGTGAAGACTGGAAGCTAATTTGCATAAATTCA
CAAACCTTTTATACTCTTCTGTATATACATTTTCTTTAAAAACAACCTATGG
ATCAGAATAGCAACATTTAGAACACTTTTTGTTATCAGTCAATATTTTAGATAGT
TAGAACCTGGTCCTAAGCCTAAAAGTGGGCTTGATTCTGCAGTAAATCTTTTACA
ACTGCCTCGACACACATAAACCTTTTTTAAAAATAGACACTCCCCGAAGTCTTTTG

TTCGCATGGTCACACACTGATGCTTAGATGTTCCAGTAATCTAATATGGCCACAG
 TAGTCTTGATTACCAAAGTCCTTTTTTCCATCTTTAGAAAACACTACATGGGAACAA
 ACAGATCGAACAGTTTTGAAGCTACTGTGTGTGAATGAACACTCTTGCTTTAT
 TCCAGAATGCTGTACATCTATTTTGGATTGTATATTGTGTTTGTGTATTTACGCTT
 5 TGATTCATAGTAACTTCTTATGGAATTGATTTGCATTGAACACAAACTGTAAATA
 AAAAGAAATGGCTGAAAGAGCAA

SEQ ID NO: 435

>6245 BLOOD 222810.1 M33537 g182662 Human N-formylpeptide receptor (fMLP-R98)

10 mRNA, complete cds. 0

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 GGTGAACAGTCCAGGAGCAGACAAGATGGAGACAAATTCCTCTCTCCCCACGAA
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 CTTATCTGGTATTTGCAGTCACCTTTGTCTCGGGGTCCTGGGCAACGGGCTTGTG
 15 ATCTGGGTGGCTGGATTCCGGATGACACACACAGTCACCACCATCAGTTACCTGA
 ACCTGGCCGTGGCTGACTTCTGTTTCACCTCCACTTTGCCATTCTTCATGGTCAGG
 AAGGCCATGGGAGGACATTGGCCTTTCGGCTGGTTCCTGTGCAAATTCCTCTTTA
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 GGACCGCTGTGTTTGCCTGCTGATCCAGTCTGGACCCAGAACCACCGCACCGTG
 20 AGCCTGGCCAAGAAGGTGATCATTGGGCCCTGGGTGATGGCTCTGCTCCTCACAT
 TGCCAGTTATCATTCGTGTGACTACAGTACCTGGTAAAACGGGGACAGTAGCCTG
 CACTTTTAACTTTTCGCCCTGGACCAAGGACCCTAAAGAGAGGATAAAACGTGGCC
 GTTGGCATGTTGACGGTGAGAGGGCATTCCGGTTCATCATTTGGCTTGAGCGCAC
 CCATGTCCATCGTTGCTGTGAGTTATGGGCTTATTGCCACCAAGATCCACAAGCA
 25 AGGCTTGATTAAAGTCCAGTCGTCCCTTACGGGTCCTCTCCTTTGTGCGCAGCAGCCT
 TTTTCTCTGCTGGTCCCCATATCAGGTGGTGGCCCTTATAGCCACAGTCAGAATC
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 AGTGCCCTGGCCTTCTTCAACAGCTGCCTCAACCCCATGCTCTATGTCTTCATGGG
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 30 CCTGACCGAGGACTCAACCCAAACCAGTGACACAGCTACCAATTCTACTTTACCT
 TCTGCAGAGGTGGCGTTACAGGCAAAGTGAGGAGGGAGCTGGGGGACACTTTCG
 AGCTCCCAGCTCCAGCTTCGTCTCACCTTGAGTTAGGCTGAGCCACAGGCATTTT
 CTGCTTATTTTAGGATTACCCACTCATCAGAAAAAAGCCTTTGTGTCC
 CCTGATTTGGGGAGAAATAACAGATATGAGTTTATTATTGACTTCTTTTTTGATTT
 35 TGGACCTCAGCCTCGGGTGGTCAGGGTGGGAAATGATAGGAAGAAGCTGTCATC
 TGCATCCTAGTTTGCCTGAAATGAACCCAAATAATACCCATTATTATTAGTCCTG
 AATTATGAGTAGTGAATGATACCCATCATTCTGGCATCATGATGAGTAGTGTCCA
 CTTCCATTCTGAAAAGTGCCCTGCTGTGAAAAATAAATTATATAGTCATCCTAGG
 TAAATGAAGGAGGAGGGAGAAGTGTGAAAGAGTATGGCTTAAATCAGACAAGA
 40 TATACAAGAAGATACTTT

SEQ ID NO: 436

>6269 BLOOD 234630.33 M59040 g180129 Human cell adhesion molecule (CD44) mRNA, complete cds. 0

45 CTTGCTCGCTCCCTCCCTCCGTCTTAGGTCACTGTTTTCAACCTCGAATAAAAAC
 TGCAGCCAACTTCCGAGGCAGCCTCATTGCCAGCGGACCCCAGCCTCTGCCAGG
 TTCGGTCCGCCATCCTCGTCCCGTCCTCCGCCGGCCCTGCCCGCGCCAGGGA
 TCCTCCAGCTCCTTTCGCCCGCGCCCTCCGTTGCTCCGGACACCATGGACAAGTT
 TTGGTGGCACGCAGCCTGGGGACTCTGCCTCGTGCCGCTGAGCCTGGCGCAGATC

GATTTGAATATAACCTGCCGCTTTTGCAGGTGTATTCCACGTGGAGAAAAATGGTC
GCTACAGCATCTCTCGGACGGAGGCCGCTGACCTCTGCAAGGCTTTCAATAGCAC
CTTGCCCAACAATGGCCAGATGGAGAAAGCTCTGAGCATCGGATTTGAGACCTG
CAGGTATGGGTTCATAGAAGGGCACGTGGTGATTCCCCGGATCCACCCCAACTCC
5 ATCTGTGCAGCAAACAACACAGGGGTGTACATCCTCACATCCAACACCTCCCAGT
ATGACACATATTGCTTCAATGCTTCAGCTCCACCTGAAGAAGATTGTACATCAGT
CACAGACCTGCCCAATGCCTTTGATGGACCAATTACCATAACTATTGTTAACCGT
GATGGCACCCGCTATGTCCAGAAAGGAGAATACAGAACGAATCCTGAAGACATC
TACCCCAAGCAACCCTACTGATGATGACGTGAGCAGCGGCTCCTCCAGTGAAAGG
10 AGCAGCACTTCAGGAGGTTACATCTTTTACACCTTTTCTACTGTACACCCCATCCC
AGACGAAGACAGTCCCTGGATCACCGACAGCACAGACAGAATCCCTGCTACCAG
AGACCAAGACACATTCCACCCCAAGTGGGGGGTCCCATAACCACTCATGGATCTGA
ATCAGATGGACACTCACATGGGAGTCAAGAAGGTGGAGCAAACACAACCTCTGG
TCCTATAAGGACACCCCAAATTCCAGAATGGCTGATCATCTTGGGCATCCCTCTT
15 GGCCTTGGCTTTGATTCTTGCAGTTTGCATTGCAGTCAACAGTCAAGAAGGTGT
GGGCAGAAGAAAAAGCTAGTGATCAACAGTGGCAATGGAGCTGTGGAGGACAG
AAAGCCAAGTGGACTCAACGGAGAGGCCAGCAAGTCTCAGGAAATGGTGCATT
GGTGAACAAGGAGTCGTCAGAACTCCAGACCAGTTTATGACAGCTGATGAGAC
AAGGAACCTGCAGAATGTGGACATGAAGATTGGGGTGTAACACCTACACCATTA
20 TCTTGAAAGAAACAACCGTTGGAAACATAACCATTACAGGGAGCTGGGACACT
TAACAGATGCAATGTGCTACTGATTGTTTCATTGCGAATCTTTTTTAGCATAAAAT
TTTCTACTCTTTTGTGTTTTGTGTTTTGTTTAAAGTCAGGTCCAATTTGTAAA
AAACAGCATTGCTTTCTGAAATTAGGGGCCAATTAATAATCAGCAAGAATTGATC
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25 AACAAAACTACACATATGTATTCCTGATCGCCAACCTTTCCCCCACCAGCTAAG
GACATTTCCCAGGGTTAATAGGGCCTGGTCCCTGGGAGGAAATTTGAATGGGTCC
ATTTTGGCCTTCCATAGCCTAATCCCTGGGCATTGCTTTCCACTGAGGTTGGGGT
TGGGGTGTACTAGTTACACATCTTCAACAGACCCCTCTAGAAATTTTTCAGATG
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30 GTGTTTTTGAATATTAAACCCTGGATCAGTCCTTTGATCAGTATAATTTTTTAAA
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SEQ ID NO: 437

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SEQ ID NO: 438

>6304 BLOOD 447973.12 D50683 g1827474 Human mRNA for TGF-betaII_R alpha,
complete cds. 0

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SEQ ID NO: 439

>6308 BLOOD Hs.22675 gnl|UG|Hs#S1969031 Homo sapiens mRNA for KIAA1144

protein, partial cds /cds=(119,1588) /gb=AB032970 /gi=6329972 /ug=Hs.22675 /len=5027

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SEQ ID NO: 440

>6321 BLOOD gi|177991|gb|M16405.1|HUMACHRM4 Human m4 muscarinic
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SEO ID NO: 441

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SEO ID NO: 442

>6332 BLOOD 1095450.1 X87949 g1143491 Human mRNA for BiP protein. 0

371

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SEQ ID NO: 443

>6336 BLOOD 988256.7 M21121 g339420 Human T-cell-specific protein (RANTES)

mRNA, complete cds. 0

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 40 CGGGGTAAAGAGATCCGAGCCATTCTTGGTTACCCCGGTGAAACCCAGTCTCC
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25 CCATGCTGCACTGTGTCACTGGTGTAAATGAGTGCTCCATTGCATTTACAAAGA
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SEQ ID NO: 444

>6352 BLOOD 346440.22 M24899 g537521 Human triiodothyronine (ear7) mRNA,
complete cds. 0

CCCCGGGCGCAGGAGGCGGGCGGCCCGGCCCCACCGGCCCCCATGGACGCCCC
35 CAGCACGGGGCGCTGAGACCCCGCGTCGCTGCCAGCCCGGTCCGGCGCGCCA
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CCCCCTCCACCGCCCCGCCCCCTTGGGGCGCAGGGCATGGTGTGAAAGGCCAAG
TGCTGAGGCGGGTATCATGGGTGCTGTGCCCTAGGGCCTGGGTGGCAGGGGGTG
40 GGTGGCCTGTGGGTGTGCCGGGGGGGCCAGTGTGCCACCCAGTCTCTTGGCGT
GCTGGAGGGCATCCTGGATGGAATTGAAGTGAATGGAACAGAAGCCAAGCAAG
GTGGAGTGTGGGTGACACCCAGAGGAGAACAGTGCCAGGTCAACAGATGGAAA
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GCGTAAGCTGATTGAGCAGAACCGGGAGCGGCGGCGGAAGGAGGAGATGATCC

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5 GGCCATCACCCGTGTGGTGGACTTTGCCAAAAAACTGCCCATGTTCTCCGAGCTG
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SEQ ID NO: 445

>6353 BLOOD Hs.73817 gnl|UG|Hs#S268571 Homo sapiens' gene for LD78 alpha

precursor, complete cds /cds=(86,364) /gb=D90144 /gi=219905 /ug=Hs.73817 /len=781
35 CAGAAGGACACGGGCAGCAGACAGTGGTCAGTCCTTTCTTGGCTCTGCTGACACT
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GCCAGCGACCTCGGTGGGCCCAGTGGGGAGGAGCAGGAGCCTGAGCCTTGGGA
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45 CCACACTGTGGGACTCTTCTTAACTTAAATTTTAAATTTATTTATACTATTTAGTTTT
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SEQ ID NO: 446

- 5 >6372 BLOOD 902559.1 M34309 g183990 Human epidermal growth factor receptor
(HER3) mRNA, complete cds. 0

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10 CTTGGCTGGGCTCCCTTCACCCCTCTGCCGAGTCAATGAGGGCGAACGACGCTCTGC
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15 CGAGAAGTGACAGGCTATGTCCTCGTGGCCATGAATGAATTCTCTACTCTACCAT
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NN
NN
NN

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 20 GTCCACATACTTCACCTTGGTGATCGCCTCATGCTCCTTCTCCAAGGCTGCTGTGG
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 TTTTGGTTGCGAGTGATCTTGGGCTCAGGCTGCTCTGCGAGCTCGCTCAGGTA
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SEQ ID NO: 448

>6407 BLOOD 199338.3 M31315 g182291 Human coagulation factor XII (Hageman)

mRNA, 3' end. 0

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20 GCAGTGAGAGAGTGGCTGGGGCATGGAAGGCAAGATTGTGTCCCATTCCCCCAG
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SEQ.ID NO: 449

25 >6436 BLOOD gi|219919|dbj|D13515.1|HUMMARR Homo sapiens mRNA for key subunit
of N-methyl-D-aspartate receptor, complete cds
GCTTCAGCGCCCCCTTCCCTCGGCGGACGTCCCGGGACCGCCGCTCCGGGGGAGAC
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CGGGGGATGCGCCGAGGGCCCCGCGTTCGCGCCGCGCAGAGCCAGGCCCCGCGGC
30 CCGAGCCCATGAGCACCATGCGCCTGCTGACGCTCGCCCTGCTGTTCTCCTGCTC
CGTCGCCCCGTGCCGCGTGCGACCCCAAGATCGTCAACATTGGCGCGGTGCTGAGC
ACGCGGAAGCACGAGCAGATGTTCCGCGAGGCCGTGAACCAGGCCAACAAGCG
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35 CCATCCTAGTTAGCCATCCACCTACCCCCAACGACCACTTCACTCCCACCCCTGTC
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45 CTCATCAACGGCAAGAACGAGTCGGCCACATCAGCGACGCCGTGGGCGTGGTG
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35 AGCACCCCCAG

SEQ ID NO: 450

>6437 BLOOD 242455.2 U72648.1 g3914602 Human alpha2-C4-adrenergic receptor gene,
complete cds. 0

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SEQ ID NO: 451
>6460 BLOOD gi|603954|dbj|D43950.1|HUMKG1DD Homo sapiens mRNA for KIAA0098
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SEQ ID NO: 452

>6469 BLOOD 478620.78 D55696 g1890049 Human mRNA for cysteine protease, complete
cds. 0

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SEQ ID NO: 453

>6521 BLOOD 244633.12 L11066 g307322 Human mRNA sequence. 0

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5

SEQ ID NO: 454

>6538 BLOOD 332156.1 AF004021 g2257849 Human prostaglandin F2 alpha receptor
mRNA, complete cds. 0

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20 SEQ ID NO: 455

>6545 BLOOD 228575.9 L29384 g495867 Human (clone pcDNA-alpha1E-1) voltage-

dependent calcium channel alpha-1E-1 subunit mRNA, complete cds. 0

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30 TTCTTCAAGGAGGTCACTACGCAGTCGAAGACGGCCTTGAGCTTGGGCAAGCGCT
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35 ACACGCCCGTGAACACATAGTCAAAATACCTCAGGACTTTGTTGCGCTCCGAGTT
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40 TCTCTGATCTCTGCCTCCTTCAAGGGACTGGCTTCCCCATCCGTCTTGTTGCTAAT
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45 TCCAGCTCAGGATGGGGCAGGACTAGGGGGGTGTCAGCCTCATCAAGGCCTCCT
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5 CTCCTCCTCGAACTTCTCCAGGGGCCAGGCCAGGGCCAGGCCCTCAATGGCCCTG
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10 GACATGTGGTGTCTTCTCCTTCTGTCTCTTTGATCGAAGGCATGTTGGGTGCAGA
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15 TTGTACATCACCTCATTCCAGTCCTCACCCGTCAGGATCTGGAACACAGTCATGA
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GGGGTTCCTTGCCGGTTCCTGCTCTGGTCCGAGTCTCCATCGCCGGACCCTGGCCT
GGCGACCACCGCCTCCCCGAAGCGAGCCATCCTGAGGTTTAAACAGACAGAAGA
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5 AGCTCCGCGAGCTCTTCGGAGAGGCAGCAGCAGC

SEQ ID NO: 456

>6559 BLOOD 404061.1 U21051 g687793 Human G-protein-coupled receptor (GPR4) gene,
complete cds. 0

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GTCAGCGGTGAAGTGAAGTTCATCCCAATCCCTCAGCCCCACCAGGACCAGTCTG
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15 CTCCTTACTGGTGACCTTACTTATCTCTGTTGCTTTCTGGGGTCTAGGAAATGCC
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25 CCCGTGGGCCAGGGGAAGCGCCCCAGAAGCCGAAGTGCCACCATGGGCAACCA
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30 CCTGCACCACGACAAGTGGATCCACGGCCCCGGGTCTGCAAGCTCTTTGGGTTC
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35 TTGAGAAGTTCCTCATGGAAGGCTGGGTGGCCTGGATGAACCTCTATCGGGTGT
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40 TCGAGGAGCGCGTCTTTTCTGCATACCACAGCTCACTGGCTTTCACCAGCCTCAA
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45 ACCAGGTGCAGCTGAAGATGCTGCCGCCAGCACAATGAACCCCGAGTGGCACAG
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SEO ID NO: 457

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25 TEGGCACTATCTCCATTGGCTCCCCACCACAGAACTTCACTGTCTCTCGACACT
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30 GAGCCAGGCCAGACCTTTGTGGATGCAGAGTTTGATGGAATTCTGGGCCTGGGAT
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40 GGCTTTCAAGGACTTGACATCCACCCTCCAGCTGGGCCCTCTGGATCCTGGGGG
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45 ATGAGANNTTCACACATAC
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 5 CTCTTTCCATCTACAGAGTTTAGCACATTTGAACGTTGCTGGTTGAAATCCCGAG
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 10 TTT

SEQ ID NO: 458

>6653 BLOOD 416874.3 M15476 g340159 Human pro-urokinase mRNA, complete cds. 0

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 20 AATGGTCACTTTTACCGAGGAAAGGCCAGCACTGACACCATGGGCCGGCCCTGC
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 25 TAAAATTTCACTGTGGCCAAAAGACTCTGAGGCCCGCTTTAAGATTATTGGGGG
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 CCGGGGGGGCTCTGTACCTACGTGTGTGGAGGCAGCCTCATCAGCCCTTGCTGG
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 5 CCAGTTATCCCTTCCTTTTAGCCTAGTTCATCCAATCCTCACTGGGTGGGGTGAGG
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SEQ ID NO: 459

10 >6657 BLOOD 284616.2 D10924 g219868 Human mRNA for HM89. 0
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SEQ ID NO: 460

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 40 SEQ ID NO: 461
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45 SEQ ID NO: 462

>13258 BLOOD 411233.5 D10995 g219678 Human gene for serotonin 1B receptor,
complete cds. 0

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10 GAGCTGGGGCGAGGAGAGCCATGGAGGAACCGGGTGCTCAGTGCGCTCCACCGC
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SEQ ID NO: 463

10 >13306 BLOOD 1096917.19 K01500 g177808 Human alpha-1-antichymotrypsin (AACT)
mRNA, complete cds. 0
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SEQ ID NO: 464

45 >13478 BLOOD 233142.9 D79986 g1136389 Human mRNA for KIAA0164 gene, complete
cds. 0
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SEQ ID NO: 465

>13519 BLOOD gi|894352|gb|H25229.1|H25229 y145d06.s1 Soares breast 3NbHBst Homo sapiens cDNA clone IMAGE:161195 3' similar to contains LTR3 repetitive element ;, mRNA sequence

20 ATTCTTTAAAAAATTAGTTGCTTTTTATACAGCTATACAAAGTTCTTAATGTTTCT
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 AGCAGCCCTAATTAATTGACGAAATAAGCTACCTCATATTACAGGATTCCCCAAAA
 25 GAAAGGNGGAAAAAGNACACACATACACACACACACACACACACACACACACAC
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SEQ ID NO: 466

30 >13524 BLOOD Hs.229619 gnl|UG|Hs#S219269 y149d08.s1 Homo sapiens cDNA, 3' end
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SEQ ID NO: 467

45 >13526 BLOOD Hs.260516 gnl|UG|Hs#S219414 y155d09.s1 Homo sapiens cDNA, 3' end
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5 SEQ ID NO: 468

>13580 BLOOD 978116.6 Incyte Unique

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40 SEQ ID NO: 469

>13715 BLOOD 021290.12 L08488 g186425 Human inositol polyphosphate 1-phosphatase mRNA, complete cds. 0

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30 SEQ ID NO: 470

>13823 BLOOD 335527.4 M37238 g190035 Human phospholipase C mRNA, complete cds.
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SEQ ID NO: 471

>13831 BLOOD 232067.6 AL137411 g6807963 Human mRNA; cDNA DKFZp434M082
(from clone DKFZp434M082). 1e-86

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5

10

mRNA s

20

[illegible]

>13852 BLOOD 340851.6 K03195 g183302 Human (HepG2) glucose transporter gene

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SEQ ID NO: 474

>13879 BLOOD 480881.12 X04790 g28820 Human mRNA for A-raf-1 oncogene. 0

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SEQ ID NO: 476
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 2NbHBst Homo sapiens cDNA:clone IMAGE:214990 5' similar to gb:X04412 GELSOEIN
 25 PRECURSOR, PLASMA (HUMAN);, mRNA sequence [Homo sapiens]
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SEQ ID NO: 477
 30 >14178 BLOOD GB_H75632 gi|1049954|gb|H75632|H75632 yu07b04.s1 Soares fetal liver
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40 SEQ ID NO: 478
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CACTTGTNN
NN
45 NNN
NN
NN
NN
NNNNNNNNNNNNCCCACTTGGTTTTTACTGAAGGGGAAGTGTAGAAATATATTG

ATTGTGATTCTGGTGTACCTGTGTTACCAAAAATCAAAACAAATCTTTTTTAT
TTTTATTATTATNATTATTTTGAGACA

SEQ ID NO: 479

5 >14308 BLOOD 407458.2 L07894 g292432 Human rod outer segment membrane protein 1 (ROM1) mRNA, complete cds. 0

TGACAGGGGGGCGCGTTATTAGGGCTGAGGATGGGAGGATGCTCAGGGTATTGG
GGTCAGGGTGGCATTAGCCCAGCTCAAGCCGGGCGGGCTGACTCAGCATCCTG
CCCCAGCCAGCTTCCATCCCTGACACCTCTGCACTCCCTTGGGCAGAGATGGGAG
10 ATGGCGCCGGTGTGCCCCCTGGTGTGCCCCCTGCAGCCCCGCATCCGCCTGGCAC
AAGGGCTCTGGCTCCTCTCCTGGCTGCTGGCGCTGGCTGGTGGCGTCATCCTCCT
CTGTAGTGGGCACCTCCTGGTCCAGCTAAGGCACCTTGGCACCTTCCTGGCTCCC
TCCTGTCACTTCCCTGTCCTGCCCCAGGCTGCCCTGGCAGCGGGCGCGGTGGCTC
TGGGCACAGGACTAGTGGGTGTAGGAGCCAGCCGGGCAAGTCTGAATGCAGCTC
15 TATACCCTCCCTGGCGAGGGGTCCTGGGCCCCGCTGCTGGTGGCTGGCACGGCTGG
TGGGGGGGGGCTCCTGGTCGTCGCCCTCGGGCTAGCCCTGGCTTTGCCTGGGAGT
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ACAGAGGTGCCTGGGCACTGTCAGGCCAAAAGGCTGGTGGATGAGCTGCAACTG
AGGTACCACTGCTGCGGGCGCCACGGGTACAAGGATTGGTTTGGGGTCCAGTGG
20 GTCAGCAGCCGTTACCTGGATCCCGGTGACCGGGATGTGGCTGACCGGATCCAG
AGCAATGTAGAAGGCCTATACCTGACTGATGGGGTCCCTTTCTCCTGTTGCAACC
CCCACTCACCCCGGCCTTGCCTGCAAAACCGTCTTTCAGACTCCTACGCCCCAACC
GCTGTTTCGATCCCCGACAACCCAAACCAAAACCGTCTGGGGCCCAAGGGTGCCATGA
GGTGCTGCTGGAGCACTTGCAGGACTTGGCAGGCACACTGGGTAGCATGCTGGC
25 TGTCACCTTCCTACTGCAGGCTCTGGTGTCTCCTTGGCCTGCGGTACCTGCAAACA
GCACTGGAGGGGCTTGGAGGGGTCATTGATGCGGGAGGAGAGACCCAGGGCTAT
CTCTTTCCCAGTGGGCTGAAAGATATGCTGAAAACAGCATGGCTACAGGGAGGG
GTTGCCTGCAGGCCAGCACCTGAGGAGGCCCCACCAGGAGAAGCACCTCCCAAG
GAGGATCTATCTGAGGCCTAGAGGCCTGGAGCTTGGGGTGAGGAAGAGGGAGGG
30 ATGGACAAGTCTGAAAACCTCACAACCTCCTTACCAAGGCTCCAGGTTGGGGGGA
TCGTAGGATTAGAGGGGCTAAGGATAGTCAGCGAGCTGGACTGGGGTAAGAAAG
AAAACCAGATGTCCTAGGGCCTAGCCCTTGTAGTCAGAACCACCAGGGAACAGC
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ATAGACTCAATAAAGTTTTTGGATGGAAAAAAGAGCGGCCGCC

35 SEQ ID NO: 480

>14315 BLOOD GB_H84982 gi|1064703|gb|H84982|H84982 ys88a08.s1 Soares retina
N2b5HR Homo sapiens cDNA clone IMAGE:221846 3' similar to SP:HTLF_HUMAN
P32314 HUMAN T-CELL LEUKEMIA VIRUS ENHANCER FACTOR ;contains MER22

40 repetitive element ;, mRNA sequence [Homo sapiens]
GCTCCCCAGTGGTCAGCGGAGACCCCAAGGAGGATCACAACCTACAGCAGTGCCA
AGTCCTCCAACGCCCCGGAGCACCTCGCCCACCAGCGACTCCATCTCCTCCTCCTC
CTCCTCAGCCGACGACCACTATGAGTTTGCCACCAAGGGGAGCCAGGAGGGCAG
CGAGGGCAGCGAGGGGAGCTTCCGGAGCCACGAGAGCCCCAGCGACACGGAAG
45 AGGACGACAGGAAGNACAGCCAGAAGGAGCCCAAGGATTTTTTNGGGGACAGC
GGGTACGATTNCC

SEQ ID NO: 481

>14385 BLOOD 474480.3 Incyte Unique

ATCCTGCCCCGGCCTGTACATCGGCAACTTCAAAGATGCCAGAGACGCGGAACAA
TTGAGCAAGAACAAGGTGACACATATTCTGTCTGTCCACGATAGTGCCAGGCCTA
TGTTGGAGGACAAGACATTTCAAAGAAAGTATTAAATTCATTACGAGTGCCGG
CTCCGCGGTGAGAGCTGCCTTGTACACTGCCTGGCCGGGGTCTCCAGGAGCGTGA
5 CACTGGTGATCGCATACATCATGACCGTCACTGACTTTGGCTGGGAGGATGCCCT
GCACACCGTGCGTGCTGGGAGATCCTGTACCAACCCCAACGTGGGCTTCCAGAG
ACAGCTCCAGGAGTTTGAGAAGCATGAGGTCCATCAGTATCGGCAGTGGCTGAA
GGAAGAATATGGAGAGAGCCCTTTGCAGGATGCAGAAGAAGCCAAAAACATTCT
GGGTAAATATAAGGAGCAAGGGCGCACAGAGCCCCAGCCCGGCGCCAGGCGGT
10 GGAGCAGTTTTCCGGCACTGGCTCCGCTGACCTACGATAATTATACGACGGAGAC
CTAACGCAAGCGACCTGCTGCCTTCCTTCCCACTGCTTGTCTTCAGTGTGCCCGGC
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GGGCGAGGTGGGGCGAGGGCTCCTTTCCCCCAAGCAACACCGCCCAGCCCTGCT
CCAGGCCCTGCACTCAGCCCACCCCTACCCTGGCTGCACCTGAGCTTGCTGCCC
15 CCGGGGATGTTGCCAGTGGCTGTGCACTGCTCTGTGCACGTGCGTGTGTGTGAG
TGCACTTGTGTGTGGGTGACTAAGTGGATGCATGTGTGTGCCTGTGTGAGTGAGG
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NN
NNNNNNNNNNNNNNNNNNNNNNNNNNNNCCACCTTTCCCTTTGTCCAAGACTCCACA
20 TGGAAGGCATTTGAGCTCGACCTCCGAAAAGCTACCCAGCAAAGAGCAGTCTGT
GCCTCTGAGCAGACCGTGAGAACTCAGGGGACGAGTGGCTAAGAGCATGGCCTC
TCCGAGAACCCACCCAGGGTGGTGTGGTGGGGGCAACAGGGGGCCAGACTCCTCT
AGAGGGAGGGTGGCTCTGGGGCCCTGGAAAACGTGAGAGACTGCCCTGAGCTGG
TCCAGTGGGGCAGCACTTTATACCAACTCAGCATTTAAGGGAAGTATCTTAGATT
25 GCCTCCATCTCAATGTGAATGCACCAGGCTGAGGGTTCCTAGCGCCTTGAGTCA
AGGCCACTTTTCAGCCCATCGAGCCCTGAGTTCTACTTGGTGTGTTGTTCTCTGGAG
CTGATTGCACTTGAGCTCTGTGGTGGGCAGGCGCACTTTAGCCTAAGTTGGGTGC
CCCAGGGCACCCCTCCTCTCTGCTCCTTGCCAGCTTCATTCACTCCCAGCCTCTC
GCTGTCCTCACTTTGCAGGGGCTCCTCCTCAACATTTGCATGCACCTGCAAGAAT
30 TGGGAAGAAAGAGCATTTATTAGGCACTGTAGCAATTTGCATTTTAAAATGCCTG
AGCATTTATTAAGCTTCTTGGTATTCACTTGGGTTTGATAATTGATCTGAGCTACC
TCATTGAATGTTTTTGGAAGGTGTTTTTTGGTATGCAAGTCAGCTTTGCCTCACA
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35 AAATTCACATTCAGGCCACGAGAGCATCTACAGTTTGTACTCTGGGGCTGCAGG
CATCCTGGGACGCTGTACGCAATTCAGTGGTCTAGTCCTTTATACCGACTCAGAT
TCCTTAAGCATGCAGAGTCACTCGAATGAAAAACATACTCGACCTCTCCCTAAA
AAGATGTTGCAACCCAGTTTCTCTGAATTCACCACAAAAAGAGACCCTGAATAA
GAAGAGCAGTTTTCTATGCATATAGAGGGTGTGTCAAAGGTGAGCTTTTTGGGG
40 ACCGGGAAAAACAAAGTTGCCTGATTCCGCGCAGGTGCACAGGCCCGGATGTA
CACCCGGAAAGGGGAGTGTGGCTGTAGAATCATCCATCCGTCTACAGCTAAAC
AATTTGCCAATAAAGTACATGTTTTCTTAAGCCAAAAATAAATATAAATACGTT
AACAGAAAAATGATTTAGGATATAGCTTGAATGCTTAAATATGTGCACCTTTACA
AACCTCTCAGTGTATTCTTGGAGTTCTTGAAATGTTGTTTTAATATTTGTTGCCAG
45 TAATGTTCTTTCTTC

SEQ ID NO: 482

>14445 BLOOD GB_H94163 gi|1101459|gb|H94163|H94163 yv14c07.r1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:242700 5' similar to contains Alu repetitive element;, mRNA sequence [Homo sapiens]

5 CCTGCTTCAGCCTCCCAAGTAGCTGGGATTACAGGCGCCACCACCGCACCCGGC
TAATTTTTGTATTTTATAGTAGGGACGGGATTTCTCCGTGTTGGCCAGGCTTTTTGA
ACTCCTGACCTTAGGTGATCTGCCTGCCTTGGCCTCCCAAAGTGCTGGGATTACA
GGTATGAGCCACTGTGCCCATCCTCATGTCAATTTTAAAGTGATAAATCCTGAT
ATTANACATTGCAATTAGTGTAGAATAAACGCTTGGCTTATAGAACTCTCTGTTC
10 TTNAGTCTAAAG

SEQ ID NO: 483

>14450 BLOOD 347864.28 Incyte Unique

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CACTTTGATTCCAGGCGTGAATTCCAAGAAGAACCAAATGTATTTTACTGGGGT
CCAGGGGAGATGCTGGTATGTGAAACCTCCTTCAACAAAAAAGAAAAATCAGAG
ATGGTGCCAAGTTGCCCCTTATCTATATCATCCGTAAGGATGTAGATGTTTACTC
TCAAATCTTGAGAAAACCTTCAATGAATCCCATGGAATCTTCTGGGCCTCCAG
20 AGAATTGACGAAGAGTTGACTGGAAAATCCAGAAAATCTCAATTGGTTCGAGTG
AGTAAAAACTACCGATCAGTCATCAGAGCATGTATGGAGGAAATGCACCAGGTT
GCAATTGCTGCTAAAGATCCAGCCAATGGCCGCGCAGTTCAGCAGCCAGGTCTCCA
TTTTGTGAGCAATGGAGCTCATCTGGAAGCTGTGTGAGATTCTTTTATTGAAGTG
GCCCCAGCTGGCCCTCTCCTCCTCCATCTCGTTGACTGGGTCCGGCTCCATGTGFG
25 CGAGGTGGACAGTTTGTGCGGCAGATGTTCTGGGCAGTGAGAATCCAAGCAAACA
TGACAGCTTCTGGAACCTTGGTGACCATCTTGGTGCTGCAGGGCCGGCTGGATGAG
GCCCCAGAGATGCTCTCCAAGGAAGCCGATGCCAGCCCCGCCTCTGCAGGCATA
TGCCGAATCATGGGGGACCTGATGAGGACAATGCCCATCTTAGTCCTGGGAAC
ACCCAGACACTGACAGAGCTGGAGCTGAAGTGGCAGCACTGGCACGAGGAATGT
30 GAGCGGTACCTCCAGGACAGCACATTCGCCACCAGCCCTCACCTGGAGTCTCTCT
TGAAGATTATGCTGGGAGACGAAGCTGCCTTGTTAGAGCAGAAGGAACCTTCTGA
GTAATTGGTATCATTTTCTAGTGACTCGGCTCTTGTACTCCAATCCCACAGTAAA
ACCCATTGATCTGCACTACTATGCCCAGTCCAGCCTGGACCTGTTTCTGGGAGGT
GAGAGCAGCCCAGAACCCCTGGACAACATCTTGTTGGCAGCCTTTGAGTTTGACA
35 TCCATCAAGTAATCAAAGAGTGCAGCATCGCCCTGAGCAACTGGTGGTTTGTGGC
CCACCTGACAGACCTGCTGGACCACTGCAAGCTCCTCCAGTCACACAACCTCTAT
TTCGGTTCCAACATGAGAGAGTTCCTCCTGCTGGAGTACGCCTCGGGACTGTTTG
CTCATCCCAGCCTGTGGCAGCTGGGGGTGATTACTTTGATTACTGCCCCGAGCT
GGGCCGAGTCTCCCTGGAGCTGCACATTGAGCGGATACCTCTGAACACCGAGCA
40 GAAAGCCCTGAAGGTGCTGCGGATCTGTGAGCAGCGGCAGATGACTGAACAAGT
TCGCAGCATTTGTAAGATCTTAGCCATGAAAGCCGTCCGCAACAATCGCCTGGGT
TCTGCCCTCTCTTGAGCATCCGTGCTAAGGATGCCGCCTTTGCCACGCTCGTGTC
AGACAGGTTTCTCAGGGATTACTGTGAGCGAGGCTGCTTTTCTGATTGGATCTC
ATTGACAACCTGGGGCCAGCCATGATGCTCAGTGACCGACTGACATTCCTGGGA
45 AAGTATCGCGAGTTCCACCGTATGTACGGGGAGAAGCGTTTTGCCGACGCAGCTT
CTCTCCTTCTGTCTTGATGACGTCTCGGATTGCCCTCGGTCTTTCTGGATGACT
CTGCTGACAGATGCCTTGCCCTTTTGGAAACAGAAACAGGTGATTTTCTCAGCAG
AACAGACTTATGAGTTGATGCGGTGTCTGGAGGACTTGACGTCAAGAAGACCTG
TGCATGGAGAATCTGATACCGAGCAGCTCCAGGATGATGACATAGAGACCACCA

AGGTGGAAATGCTGAGACTTTCTCTGGCACGAAATCTTGCTCGGGCAATTATAAG
AGAAGGCTCACTGGAAGGTTCTTGAGAACTGCTTCAATGTGGTATCTTTGTATGG
CAATGTATATAGATTTTTTTTAAAAGAATAAATGTTGTTTGCAAATGTAGGTTCTTA
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5 GATTAAAAAATGC

SEQ ID NO: 484

>14476 BLOOD GB_H94944 gi|1102577|gb|H94944|H94944 yu57h03.r1 Soares fetal liver
spleen 1NFLS Homo sapiens cDNA clone IMAGE:230261 5' similar to gb:M29893 RAS-

10 RELATED PROTEIN RAL-A (HUMAN);, mRNA sequence [Homo sapiens]
NTCCTCATNCTCCTNACCCTCCTCCTTCNCNTTCTTNTCCTCCTCCTCCTCCAGCN
GCCCAGNTCNCCCCGCNACCCGTCAGACTCCTCCTTCGACCGCTCCCGGCGCGGG
GCCTTCCAGGCGACAAGGACCGAGTACCCTCCGGCCGGAGCCACGCAGCCGNGC
TTCCGGAGCCCTCGGGGNGCTGGACTGGCTCGCGGTGCAGATTCTTCTTAATCCT
15 TTGGTGAAAACCTGAGACACAAAATGGCTGCAAATAAGCCCAAGGGTCAGAATTC
TTTGGCTTTTACACAAAGTNCATCATGGTGGGCAGTGGTGGCGTGGGCAAGTCAG
CTCTGAATTCTAACAGTTTCATGTTACGGATGAAGTTTGTGTAGGACTATGTA

SEQ ID NO: 485

20 >14509 BLOOD Hs.75929 gnl|UG|Hs#S417461 Human mRNA for OB-cadherin-2, complete
cds/cds=(476,2557) /gb=D21255 /gi=575578 /ug=Hs.75929 /len=3867

ACAGGCGCGCGACGCTCCCGCTCAGCTGGGGGGCGGCGCGGAGAGATGCCGCGGG
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TGACACCGCAGCGCTTGCCCTGCGGCAGGGACTGGCGGCTCGGAGGTTGCGTCC
25 AGCCTCAAGGGCCCCAGAAATCACTGTGTTTTTCAGCTCAGCGGCCCTGTGACATT
CCTTCGTGTTGTCAATTTGTTGAGTGACCAATCAGATGGGTGGAGTGTGTTACAGA
AATTGGCAGCAAGTATCCAATGGGTGAAGAAGAAGCTAACTGGGGACGTGGGCA
GCCCTGACGTGATGAGCTCAACCAGCAGAGACATTCCATCCCAAGAGAGGTCTG
CGTGACGCGTCCGGGAGGCCACCCTCAGCAAGACCACCGTACAGTTGGTGAAG
30 GGGTGACAGCTGCATTCTCCTGTGCCTACCACGTAACCAAAAATGAAGGAGAAC
TACTGTTTACAAGCCGCCCTGGTGTGCCTGGGCATGCTGTGCCACAGCCATGCCT
TTGCCCCAGAGCGGCGGGGGCACCTGCGGCCCTCCTTCCATGGGCACCATGAGA
AGGGCAAGGAGGGGCAGGTGCTACAGCGCTCCAAGCGTGGCTGGGTCTGGAACC
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35 TCATTCAAGATATTGACTCTGGTGATGGGAACATTAAATACATTCTCTCAGGGGAA
GGAGCTGGAACCATTTTTGTGATTGATGACAAATCAGGGAACATTCATGCCACCA
AGACGTTGGATCGAGAAGAGAGAGCCCAGTACACGTTGATGGCTCAGGCGGTGG
ACAGGGACACCAATCGGCCACTGGAGCCACCGTCGGAATTCATTGTCAAGGTCC
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AACATGGACAGGGAGGCCAAGGAGGAGTACCACGTGGTGATCCAGGCCAAGGA
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45 GACCGATGTCAATGACAACCCACCAAAGTTTCCGCAGAGCGTATACCAGATATCT
GTGTCAGAAGCAGCCGTCCCTGGGGAGGAAGTAGGAAGAGTGAAAGCTAAAGA
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GCAGCCAACGTGCACATCGACCCGAAGTTTATCAGCAATGGCCCTTTCAAGGAC
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 CCCCAGTTACATCCACGAAGTCCAAGAAAATGCAGCTGCTGGCACCGTGGTTG
 GGAGAGTGCATGCCAAAGACCCTGATGCTGCCAACAGCCCGATAAGGTATTCCA
 5 TCGATCGTCACACTGACCTCGACAGATTTTTCACTATTAATCCAGAGGATGGTTTT
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 GTCTTTGCAGCAGAAATCCACAATCGGCATCAGGAAGCCAAAGTCCCAAGTGGCC
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 10 AATTAGTGCAGATGACAAGGATGACACGGCCAATGGACCAAGATTTATCTTCAG
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 15 CTGCAACGCAGAGGCCTACATTCTGAACGCCGGCCTGAGCACAGGCGCCCTGAT
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 25 AGGAGGCAGACAATGACCCACGGCTCCTCCTTATGACTCCATTCAAATCTACGG
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 CACAGATTCAGACTTGGACTATGATTATCTACAGAACTGGGGACCTCGTTTTAAG
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 30 ATGTGTAAACAGGTATTTTTTTTAAATCAAGGAAAGGCTCATTTAAAACAGGCAAA
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 40 AGTGAGAGACGCCCTATTTCTATGTCATTTTTAATGTATCTATTTGTACAATTTA
 AAGTTCTTATTTTAGTATACATATAAATATCAGTATTCTGACATGTAAGAAAATG
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45 SEQ ID NO: 486

>14510 BLOOD Hs.260473 gnl|UG|Hs#S133063 yf99h12.s1 Homo sapiens cDNA, 3' end
 /clone=IMAGE:30797 /clone_end=3' /gb=R42293 /gi=817160 /ug=Hs.260473 /len=471
 TTTTTTTTTTTNTTTCGCTTTATTTTNATTTATTTATTTATTTATTTATTTATNT
 ATATNTGAGACAGAGTCTTAACACTGTNGCCAGGNTGGTAGTGCAATGGCGTG

ATCTCAGCTCACTGCAAGCTCTGCCNCTTGGATTTCATGCCTTTCTCCNGCCTCAGC
CTCCCGAGTAGCTGGGACTACAGGGGGCCACCACCACGCCAGCTAATTTTTTGT
ACTTTTAGTAGAGACAGGGTTTACCNTGTTAGCCAGGGTAGTCTCGATCTCCTG
ACCTCGTGAGCCGCTGCCTNGGCCTCCCAAAGTGCTGGGATTACAGGCATGAGC
5 CACCGTGCCTGGGCCACGTCCCTATTTTAGNAAATGAGAGGAGTGACTGCACATA
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SEQ ID NO: 487

10 >14521 BLOOD 441403.1 L34789 g514934 Human (clone L6) E-cadherin (CDH1) gene,
exon 16. 0
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GCTTTGCCCAAGATAGGAGTTCTCTGATGCAGAAATTATTGGGCTCTTTTAGGGT
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15 ACCTTTAATGGCTTCCCTCTTTCATCTCCTGAGTATGTAACCTTGCAATGGGCAGCT
ATCCAGTGACTTGTTCTGAGTAAGTGTGTTTATTAATGTTTATTTAGCTCTGAAGC
AAGAGTGATATACTCCAGGACTTAGAATAGTGCCTAAAGTGCTGCAGCCAAAGA
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20 TCTGAAAATTCTGGAAGGAATGGAGGAGTCTCAACATGTGTTTCTGACACAAGAT
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GGGCCCTAAAGGGGGTGTAGTTGAGGGGTAGGGGGTAGTGAGGATCTTGATTTGGA
25 TCTCTTTTTATTTAAATGTGAATTTCAACTTTTGACAATCAAAGAAAAGACTTTTG
TTGAAATAGCTTTACTGTTTCTCAAGTGTTTTGGAGAAAAAATCAACCCTGCAA
TCACTTTTTTGAATTTGTCTTGATTTTTTCGGCAGTTCAAGCTATATCGAATATAGTT
CTGTGTAGAGAATGTCACTGTAGTTTTGAGTGTATACATGTGTGGGTGCTGATAA
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30 TCTCAAAGATGCATTTTTATAAATTTTATTAAACAATTTTGT

SEQ ID NO: 488

>14531 BLOOD 903254.4 U44103 g1174146 Human small GTP binding protein Rab9
mRNA, complete cds. 0
35 GTTGTTCCTCCGACGCTGGACGGGAGCAGCTGGAGCGGGAGCCTGGCTGCGCT
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CCAGACGGGCGGCCAGAGCTCCCGGGTCGTCTTTCGTGTGGCCGCGAGACACT
CTTGCACTCCTGTAATGAGCCTGGCACTGTGATGAAACACTTTTCCCGTGTCTGTT
GAGTGCATCTTCTCAACAACCCTAGGAGGGTTCTTGAAGCTTTTGAGATTAACAA
40 TGGCAGGAAAATCATCACTTTTTAAAGTAATTTCTCCTTGGAGATGGTGGAGTTGG
GAAGAGTTCACTTATGAACAGATATGTAACATAAAGTTTGATAACCAGCTCTTC
CATACAATAGGTGTGGAATTTTTAAATAAAGATTTGGAAGTGGATGGACATTTTG
TTACCATGCAGATTTGGGACACGGCAGGTCAGGAGCGATTCCGAAGCCTGAGGA
CACCATTTTACAGAGGTTCTGACTGCTGCCTGCTTACTTTTAGTGTGATGATTCA
45 CAAAGCTTCCAGAACTTAAGTAACTGGAAGAAAGAATTCATATATTATGCAGAT
GTGAAAGAGCCTGAGAGCTTTCTTTTGTGATTCTGGGTAAACAAGATTGACATAA
GCGAACGGCAGGTGTCTACAGAAGAAGCCCAAGCTTGGTGCAGGGACAACGGCG
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CAGACAGACACAGTCAATCTTCACCGAAAGCCCAAGCCTAGCTCATCTTGCTGTT
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 10 TAGATATTAAAGATTAAAATCTAATGTATTTGCAATGCAAAANANANANAAAA

SEQ ID NO: 489

>14654 BLOOD 237623.3 L15203 g402482 Human secretory protein (P1.B) mRNA,
complete cds. 0

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 CATGCAGGAGAGAACAGGAGCAGCCACAGCCAGGAGGGAGAGCCTTCCCCAAG
 CAAACAATCCAGAGCAGCTGTGCAAACAACGGTGCATAAATGAGGCCTCCTGGA
 CCATGAAGCGAGTCCTGAGCTGCGTCCCGGAGCCACGGTGGTCATGGCTGCCA
 20 GAGCGCTCTGCATGCTGGGGCTGGTCTGCGCTTGCTGTCCTCCAGCTCTGCTGA
 GGAGTACGTGGGCCTGTCTGCAAACCAAGTGTGCCGTGCCAGCCAAGGACAGGGT
 GGACTGCGGCTACCCCATGTACCCCCAAGGAGTGCAACAACCGGGGCTGCTG
 GCTTGACTCCAGGATCCCTGGAGTGCCTTGGTGTTCGAAGCCCTGCAGGAAGCA
 GAATGCACCTTCTGAGGCACCTCCAGCTGCCCGCGCGGGGATGCGAGGCTC
 25 GGAGCACCTTGCCCGGCTGTGATTGCTGCCAGGCACTGTTTCATCTCAGCTTTTCT
 GTCCCTTTGCTCCCGGCAAGCGCTTCTGCTGAAAGTTCATATCTGGAGCCTGATG
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30 SEQ ID NO: 490

>14709 BLOOD 422524.4 L31409 g493131 Human creatine transporter mRNA, complete
cds. 0

GGCCGTGCGGCCCGCCGGGGCCATGGCGAAGAAGAGCGCCGAGAACGGCATCTA
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 35 TGCCCCGTCCAAGGGCGATGGCCCTGCGGGCCTGGGGGCGCCCAGCAGCCGCCT
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 CGTGGGCTTCGCCGTGGGCTTGGGCAACGTGTGGCGCTTCCCCTACCTGTGCTAC
 AAGAACGGCGGAGGTGTGTTCTTATTCCCTACGTCCTGATCGCCCTGGTTGGAG
 GAATCCCCATTTTCTTCTTAGAGATCTCGCTGGGCCAGTTCATGAAGGCCGGCAG
 40 CATCAATGTCTGGAACATCTGTCCCCTGTTCAAAGGCCTGGGCTACGCCTCCATG
 GTGATCGTCTTCTACTGCAACACCTACTACATCATGGTGTGCTGGCCTGGGGCTTCT
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 AGCCTGGCCAACCTCACCTGTGACCAGCTTGCTGACCGCCGGTCCCCTGTCATCG
 45 AGTTCTGGGAGAACAAAGTCTTGAGGCTGTCTGGGGGACTGGAGGTGCCAGGGG
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 TGTGTCTGGAAGGGGGTCAAATCCACGGGAAAGATCGTGTACTTCACTGCTACAT
 TCCCCTACGTGGTCTTGGTCTGTGCTGGTGCCTGGAGTGCTGCTGCCTGGCGC
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CAGGTGTGGATAGATGCGGGGACCCAGATTTTCTTTTCTTACGCCATTGGCCTGG
 GGGCCCTCACAGCCCTGGGCAGCTACAACCGCTTCAACAACAACCTGCTACAAGG
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 GGTCTTCTCCATCCTGGGCTTCATGGCTGCAGAGCAGGGCGTGCACATCTCCAAG
 5 GTGGCAGAGTCAGGGCCGGGCCTGGCCTTCATCGCCTACCCGCGGGCTGTACGC
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 GGTCTCGACAGCCAGTTTGTAGGTGTGGAGGGCTTCATCACCGGCCTCCTCGACC
 TCCTCCCGGCCTCCTACTACTTCCGTTTCCAAAGGGAGATCTCTGTGGCCCTCTGT
 TGTGCCCTCTGCTTTGTATCGATCTCTCCATGGTGAAGTGTGGCGGGATGTACGT
 10 CTTCCAGCTGTTTGACTACTACTCGGCCAGCGGCACCACCCTGCTCTGGCAGGCC
 TTTTGGGAGTGCCTGGTGGTGGCCTGGGTGTACGGAGCTGACCGCTTCATGGACG
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 CTTCTTACCCCGCTGGTCTGCATGGGCATCTTCATCTTCAACGTTGTGTACTACG
 AGCCGCTGGTCTACAACAACACCTACGTGTACCCGTGGTGGGGTGAGGCCATGG
 15 GCTGGGCCTTCGCCCTGTCTCCATGCTGTGCGTGCCGCTGCACCTCCTGGGCTGC
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 20 CCTGCTTCAGCCCCACCGCACCCCTCCAGGGGGCCTGCCTTTCCCTGACACTTTTG
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 CCCAGCCACAGTGCTGCACTCCTGCTGCCCTGCCACGCCACCCCTGCCCGACC
 25 TCTCCAGGCTCTGCTCTGCAGCACACCCGTGGGTGACCCCTCACCCAGAAAGCAG
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 GAGAGAGAGGAGAAGGGAGGCAGGGGAGGGGCAGCAGAACCAAGGCAAATATT
 TCAGCTGGGCTATACCCCTCTCCCCATCCCTGTTATAGAAGCTTAGAGAGCCAGC
 CAGCAATGGAACCTTCTGGTTCCTGCGCCAATCGCCACCAGTATCAATTGTGTGA
 30 GCTTGGGTGCGAGTGCACGCGTGCGTGAGTACGGAGAGTATATATAGATCTCTAT
 CTCTTAGCAAAGGTGAATGCCAGATGTAAATGGCGCCTCTGGGCAAAGGAGGCT
 TGTATTTTGCACATTTTATAAAAACCTTGAGAGAATGAGATTTCTGCTTGTATATT
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 35 TTCATAGGCAAAACAAAAGCTTCGAGCTGTTGCGTGTTGAGTCTGTTGTGTGGA
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 GCAATATTCGCTCCTGGGTGTCTGGGCTGCTAACCTGGCCTGCTCAGGCTTCCCA
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 40 GGCTTAAGGTGGATGCACTTCCCGCACCTCCAGTCTTCTGTGTAGCAGCTTTAAC
 CCACGTTTGTCTGTACGTCCAGTCCCGAGACGGCTGAGTGACCCCAAGAAAGGC
 TTCCCGACACCCAGACAGAGGCTGCAGGGCTGGGGCTGGGTGAGGGTGGCGGG
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 CATGTCATTTTCCAAAGCAAAAAA
 45

SEQ ID NO: 491

>14753 BLOOD Hs.125359 gnl|UG|Hs#S1973371 Homo sapiens mRNA; cDNA
 DKFZp761B15121 (from clone DKFZp761B15121); complete cds /cds=(56,541)
 /gb=AL161958 /gi=7328010 /ug=Hs.125359 /len=1791

GGAGGCTGCAGCAGCGGAAGACCCCAGTCCAGATCCAGGACTGAGATCCCAGAA
 CCATGAACCTGGCCATCAGCATCGCTCTCCTGCTAACAGTCTTGCAGGTCTCCCG
 AGGGCAGAAGGTGACCAGCCTAACGGCCTGCCTAGTGGACCAGAGCCTTCGTCT
 GGA CTGCCGCCATGAGAATACCAGCAGTTCACCCATCCAGTACGAGTTCAGCCTG
 5 ACCCGTGAGACAAAGAAGCACGTGCTCTTTGGCACTGTGGGGGTGCCTGAGCAC
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 TATCCGCCTTCACTAGCAAGGACGAGGGCACCTACACGTGTGCACTCCACCACTC
 TGGCCATTCCCCACCCATCTCCTCCCAGAACGTCACAGTGCTCAGAGACAACTG
 GTCAAGTGTGAGGGCATCAGCCTGCTGGCTCAGAACACCTCGTGGCTGCTGCTGC
 10 TCCTGCTCTCCCTCTCCCTCCTCCAGGCCACGGATTTTCATGTCCCTGTGACTGGTG
 GGGCCCATGGAGGAGACAGGAAGCCTCAAGTTCAGTGCAGAGATCCTACTTCT
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 15 CAGAGCTGCTTCTGTCTGGTTTATTTAGGTTTTATCCTTCCTTTTCTTTGAGAGTTC
 GTGAAGAGGGGAAGCCAGGATTGGGGACCTGATGGAGAGTGAGAGCATGTGAGG
 GGTAGTGGGATGGTGGGGTACCAGCCACTGGAGGGGTTCATCCTTGCCCATCGGG
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 20 AAGACCCAGATGTGAGGGGACCAACAAGAATTTGTGGCCTACCTTGTGAGGGA
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 GAGCCCTCCTTACCACTGTGGAAGTCCCTCAGAGGGCCTTGGGGCATGACCCAGTG
 AAGATGCAGGTTTGACCAGGAAAGCAGCGCTAGTGGAGGGTTGGAGAAGGAGG
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 25 GCTGCCCCCTCCCTGCCTCCACCCACAGTGGAGAGGGCTACAAAGGAGGACAAGA
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 CCAAGTCAGGTGGGGTGGAGTCCCAGAGCTGCACAGGGTTTGGCCCAAGTTTCT
 AAGGGAGGCACTTCCTCCCTCGCCCATCAGTGCCAGCCCCTGCTGGCTGGTGCC
 TGAGCCCCTCAGACAGCCCCCTGCCCCGCAGGCCTGCCTTCTCAGGGACTTCTGC
 30 GGGGCCTGAGGCAAGCCATGGAGTGAGACCCAGGAGCCGGACACTTCTCAGGAA
 ATGGCTTTTCCCAACCCCCAGCCCCACCCGGTGGTTCTTCTGTTCTGTGACTGT
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35 SEQ ID NO: 492

>14789 BLOOD 221059.6 M16768 g339399 Human T-cell receptor gamma chain VJCI-CII-CIII region mRNA, complete cds. 0

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 40 CAGCCCCAGCAACCAACAACACCAGCCTGACAACCTTGCTGGGGTGGCCGCCTTG
 TGGTCTGAGGTGGCCGTCTAAACTATGTGGTCTGATCTCAGGCTGCAGACCTTGC
 AGGACTGTCTTCACACAGACTGGAAGTGCTAACAGGTGGTGAGGACACCGCTTT
 ACAACGATGCAGGGGGGCCCATGTACCCCTCACCCATGGGAAGTTTGACTTGGTG
 GACTCAGCCAAGCCACAGAGGTCTAACGCTTCTCTGCGGTGATTCAGGCTGCCC
 45 TGGCAGAAAGCACAGTGCCTGCAGACATGCTGTCACTGCTCCACACATCAACGCT
 GGCAGTCCTTGGGGCTCTGTGTGTATATGGTGCAGGTACCTAGAGCAACCTCAA
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 GAATAACAATTTCTGCAACATCTGTATATTGGTATCGAGAGAGACCTGGTGAAGT
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ATCCGTCAGGCAAATTTGAGGTGGATAGGATACCTGAAACGTCTACTACCACTC
TCACCATTACAATGTAGAGAAACAGGACATAGCTACCTACTACTGTGCCTTGTG
GGAGGTGTAACCTTTCGAATTATTATAAGAACTCTTTGGCAGTGGAACAACACTT
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5 TCCTTCAATTGCTGAAACAAAGCTCCAGAAGGCTGGAACATACCTTTGTCTTCTT
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ACGATTCTGGGGATCCCAGGAGGGGAACACCATGAAGACTAACGACACATACAT
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TATCGTCAGACATGAGAATAATAAAAACGGAGTTGATCAAGAAATTATCTTTCT
10 CCAATAAAGACAGATGTCATCACAATGGATCCCAAAGACAATTGTTCAAAAGAT
GCAAATGATACACTACTGCTGCAGCTCACAAACACCTCTGCATATTACACGTACC
TCCTCCTGCTCCTCAAGAGTGTGGTCTATTTTGCCATCATCACCTGCTGTCTGCTT
AGAAGAACGGCTTTCTGCTGCAATGGAGAGAAATCATAACAGACGGTGGCACA
GGAGGCCATCTTTTCTCATCGGTTATTGTCCCTAGAAGCGTCTTCTGAGGATCTA
15 GTTGGGCTTTCTTTCTGGGTTTGGGCCATTTTCAGTTCTCATGTGTGTACTATTCTAT
CATTATTGTATAACGGTTTTCAAACCAGTGGGCACACAGAGAACCTCACTCTGTA
ATAACAATGAGGAATAGCCACGGCGATCTCCAGCACCAATCTCTCCATGTTTTCC
ACAGCTCCTCCAGCCAACCCAAATAGCGCCTGCTATAGTGTAGACATCCTGCGGC
TTCTAGCCTTGTCCTCTCTTAGTGTTCTTTAATCAGATAACTGCCTGGAAGCCTT
20 TCATTTTACACGCCCTGAAGCAGTCTTCTTTGCTAGTTGAATTATGTGGTGTGTTT
TTCCGTAATAAGCAAAATAAATTTAAAAAAATGAAAAGTT

SEQ ID NO: 493
14796 BLOOD 1008401.6 M17783.g183063 Human glia-derived nexin (GDN) mRNA, 5'

25 end. 0
GGACGGCAGGACCAAGAAGCAGCTCGCCATGGTGGAAAGGAACCATGAACTGGC
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GTGTTTGTAAAGAATGCCTCTGAAATTGAAGTGCCTTTTGTACAAGGAACAAAG
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35 TGATTCCATCAATGCATGGGTAAACGAAACCAGGGATATGATTGACAATCT
GCTGTCCCAGATCTTATTGATGGTGTGCTCACCAGACTGGTCCTCGTCAACGCA
GTGTATTTCAAGGGTCTGTGGAAATCACGGTTCCAACCCGAGAACACAAAGAAA
CGCACTTTCGTGGCAGCCGACGGGAAATCCTATCAAGTGCCAATGCTGGCCCAGC
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40 CATTGAACTGCCCTACCACGGGGAAGCATCAGCATGCTGATTGCACTGCCGACT
GAGAGCTCCACTCCGCTGTCTGCCATCATCCACACATCAGCACCAAGACCATAG
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TCACAGCTGTAGCACAAACAGATTTGAAGGAGCCGCTGAAAGTTCTTGGCATTAC
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45 CCTCCATGTTTCTCATATCTTGCAAAAAGCAAAAATTGAAGTCAGTGAAGATGGA
ACCAAAGCTTCAGCAGCAACAACCTGCAATTCTCATTGCAAGATCATCGCTCCCT
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GTGTTATTCATGGGGCAGATAAACAACCCCTGAAGAGTATACAAAAGAAACCAT

SEQ ID NO: 494

>14808 BLOOD 336093.2 X12830.1 g33845 Human mRNA for interleukin-6 (IL-6)
receptor. 0

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ACCCTGGGACGGCCCAGAGACGCTCCAGCGCGAGTTCCTCAAATGTTTTCTGCG
TTGCCAGGACCGTCCGCCGCTCTGAGTCATGTGCGAGTGGGAAGTCGCACTGACA
CTGAGCCGGGCCAGAGGGAGAGGAGCCGAGCGCGGCGCGGGGCCGAGGGACTC
GCAGTGTGTGTAGAGAGCCGGGCTCCTGCGGATGGGGGCTGCCCCCGGGGCTG
10 AGCCCGCCTGCCCGCCACCGCCCCGCCCCGCCCCCTGCCACCCCTGCCGCCCGGT
TCCCATTAGCCTGTCCGCCTCTGCGGGACCATGGAGTGGTAGCCGAGGAGGAAG
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GCGCTGGCCCCAAGGCGCTGCCCTGCGCAGGAGGTGGCGAGAGGCGTGCTGACC
AGTCTGCCAGGAGACAGCGTGACTCTGACCTGCCCGGGGGTAGAGCCGGAAGAC
15 AATGCCACTGTTCACTGGGTGCTCAGGAAGCCGGCTGCAGGCTCCCACCCAGCA
GATGGGCTGGCATGGGAAGGAGGCTGCTGCTGAGGTTCGGTGCAGCTCCACGACT
CTGGAAACTATTATGCTACCGGGGCCGGCCGCCAGCTGGGACTGTGCACTTGCT
GGTGGATGTTCCCCCGAGGAGCCCCAGCTCTCCTGCTTCCGGAAGAGCCCCCTC
AGCAATGTTGTTTGTGAGTGGGGTCCTCGGAGCACCCCATCCCTGACGACAAAGG
20 CTGTGCTCTTGGTGAGGAAGTTTCAGAACAGTCCGGCCGAAGACTTCCAGGAGCC
GTGCCAGTATTCCCAGGAGTCCCAGAAGTTCTCCTGCCAGTTAGCAGTCCCGGAG
GGAGACAGCTCTTTCTACATAGTGTCCATGTGCGTCCGCACTAGTGTCCGGAGCA
AGTTTCAGCAAACTCAAACCTTTCAGGGTTGTGGAATCTTGCAGCCTGATCCGCC
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25 TGGCAAGACCCCCACTCCTGGAACCTCATCTTTCTACAGACTACGGTTTGAGCTCA
GATATCGGGCTGAACGGTCAAAGACATTACAAACATGGATGGTCAAGGACCTCC
AGCATCACTGTGTATCCACGACGCCTGGAGCGGCCTGAGGCACGTGGTGCAGC
TTCGTGCCCAGGAGGAGTTCGGGCAAGGCGAGTGGAGCGAGTGGAGCCCCGAGG
CCATGGGCACGCCTTGGACAGAATCCAGGAGTCCTCCAGCTGAGAACGAGGTGT
30 CCACCCCCATGCAGGCACTTACTACTAATAAAGACGATGATAATATTCTCTTCA
AGATTCTGCAAATGCGACAAGCCTCCAGTGCAAGATTCTTCTTCAGTACCACTG
CCCACATTCTGGTTGCTGGAGGGAGCCTGGCCTTCGGAACGCTCCTCTGCATTG
CCATTGTTCTGAGGTTCAAGAAGACGTGGAAGCTGCGGGCTCTGAAGGAAGGCA
AGACAAGCATGCATCCGCGTACTCTTTGGGGCAGCTGGTCCCGGAGAGGCCTC
35 GACCCACCCCACTGCTTGTTCCTCTCATCTCCCCACCGGTGTCCCCCAGCAGCCTG
GGGTCTGACAATACCTCGAGCCACAACCGACCAGATGCCAGGGACCCACGGAGC
CCTTATGACATCAGCAATACAGACTACTTCTTCCCCAGATAGCTGGCTGGGTGGC
ACCAGCAGCCTGGACCCTGTGGATGACAAAACACAAACGGGCTCAGCAAAAGAT
GCTTCTCACTGCCATGCCAGCTTATCTCAGGGGTGTGCGGCCTTTGGCTTCACGG
40 AAGAGCCTTGCGGAAGGTTCTACGCCAGGGGAAAATCAGCCTGCTCCAGCTGTT
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45 GGATTTCCAGCCAAAGCCTCCTCCAGCCGCCATGCTCCTGGCCCACTGCATCGTT
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 5 CAGGGAGGGCTTCTGCCATTTCTGAGATCAAAACGGTTTTACTGCAGCTTTGTTT
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 CTGACTGTTTTCTCTTGAGAGGGGTGGAATATCCAATATTCGCTGTGTGTCAGCATAG
 AAGTAACTTACTTAGGTGTGGGGGAAGCACCATAACTTTGTTTAGCCCAAAACCA
 10 AGTCAAGTGAAAAAGGAGGAAGAGAAAAAATATTTTCCTGCCAGGCATGGTGGC
 CCACGCACTTCGGGAGGTCGAGGCAGGA

SEQ ID NO: 495

ye38d08.r1 Stratagene lung (#937210) Homo sapiens cDNA clone IMAGE:120015 5' similar
 15 to SP:NINS_DROME P10677 NINAC SHORT PROTEIN; mRNA sequence

gi|728449|gb|T94961.1|T94961|728449]
 TGATTGAGGAAATTGGATACAACTGTGTAGCAGACATCTGGTCCCTGGGAATAAC
 TGCCATAGAAATGGCTGAAGGAAAGCCCCCTTATGCTGATATCCATCCAATGAG
 GGCAATCTTCATGATTCCTACAAATCCTCCTCCACATTCCGAAAACCAGAGCTA
 20 TGGTCAGATAACTTTACAGATTTTGTGAAACAGTGTCTTGTAAGAGCCCTGAGC
 AGAGGGCCACAGCCACTTCAGGTTCTGCAGGCACCCATTTGTTTCAGGGAGTTGC
 CAAAGGGAGTGTTCATTATTGGGAGGATTTAATTTAATGGAAGGCCATGGGAT
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SEQ ID NO: 496

>14817 BLOOD 348110.1 X03795 g35365 Human mRNA for platelet derived growth factor
 A-chain (PDGF-A). 0

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 CCCACCCCCATCCCGGCGGCCAGGAGGCTCCCCGCGCTGGCGCGCACTCCCTGT
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 GCGCGCTCCGCCAGCTCCGTGCTCCECCGCGCCACCCTCCTCCGGGCGCGCTCCC
 35 TAAGGGATGGTACTGAATTCGCCGCCACAGGAGACCGGCTGGAGCGCCCGCCC
 CGCGGCCTCGCCTCTCCTCCGAGCAGCCAGCGCCTCGGACGCGATGAGGACCTT
 GGCTTGCTGCTGCTCCTCGGCTGCGGATACCTCGCCCATGTTCTGGCCGAGGAA
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 ATCCGGGACCTCCAGCGACTCCTGGAGATAGACTCCGTAGGGAGTGAGGATTCTT
 40 TGGACACCAGCCTGAGAGCTCACGGGGTCCATGCCACTAAGCATGTGCCCCGAGA
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 TCTGCAAGACCAGGACGGTCATTTACGAGATTCTTCGGAGTCAGGTCGACCCAC
 GTCCGCCAACTTCCTGATCTGGCCCCCGTGCGTGGAGGTGAAACGCTGCACCGGC
 TGCTGCAACACGAGCAGTGTCAAGTGCCAGCCCTCCCGCGTCCACCACCGCAGC
 45 GTCAAGGTGGCCAAGGTGGAATACGTCAGGAAGAAGCCAAAATTAAAAGAAGT
 CCAGGTGAGGTTAGAGGAGCATTTGGAGTGCGCCTGCGCGACCACAAGCCTGAA
 TCCGGATTATCGGGAAGAGGACACGGGAAGGCCTAGGGAGTCAGGTAAAAAAC
 GGAAAAGAAAAAGGTTAAAACCCACCTAAAGCAGCCAACCAGATGTGAGGTGA
 GGATGAGCCGCAGCCCTTTCCTGGGACATGGATGTACATGCCGTGTTACATTCTT

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CCGGCCGGGCGCGCCGAGCCCGAGCCCCAGCCGGAGCGGGGCGGGGGAGGGAG
GAGCCAGAGCGGCCCGCCGCCTCTGCCGGAGGAGCCGCGGGGCCGCCACACTCGG

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35

TGGGAGGCTGGGGGAGCTGTGTCCTGCAGTTCCCAGGACCCCATCCTCTCAGAAG
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TGAGAGAGAGCCCCACCCAGTTCCTTGGCCTAGGTCTCCCCTCCAGGCTGAGGG
5 CCTCTCTACTTCCCCAGATGCCTGGGTGCAAAGAACGGCTTGGCTTGGCTCCTCC
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10 ATCAGAGAGAAATGCCCCACACCAGAGCCCCCTTCTCCTGGTGGCGGGTCTGCA
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GGCGC

15 SEQ ID NO: 498

>14849 BLOOD 403113.1 M26685 g186569 Human IsK protein (exhibiting a slowly
activating channel activity) gene, complete cds, clone phKI2. 0

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GATGGTTCTCAAGAAGGCAGAAGCAATGGTGACCAATAGACCTCCTTAAAGGCT
20 GAGCCGCTGGGCACCTTCCTACTCCTCTCGACCGTGCTAGGATGACTGCAGCAGA
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GGCCTGTCTTGGAGGGCGTTGAATGGCATGGCCTGGAGCTCAACCAGGAGAAAGCA
GTGCTCAGGAGGAAGAGACCAGAAGGATAAAGTCAAAAAAGTTCTGAGAAAGTTCT
AAGACCACCTGAAGAGAAGGAGCTGCTGCCAATGGTGTGGACACCGCAGTGTG
25 CTTGAGGAGACTTCAGAAACGAGAACTGTTTCACACAATCATCAGGTGAGCCGA
GGATCCATTGGAGGAAGGCATTATCTGTATCCAGAGGAAATAGCCAAGGATATT
CAGAGGTGTGCCTGGGAAGTTTGAAGTGCAGCAGTGGAAACCTTAATGCCCAGGA
TGATCCTGTCTAACACCACAGCGGTGACGCCCTTTCTGACCAAGCTGTGGCAGGA
GACAGTTCAGCAGGGTGGCAACATGTCCGGCCTGGCCCCGAGGTCCCCCCGAG
30 CGGTGACGGCAAGCTGGAGGCCCTCTACGTCCTCATGGTACTGGGATTCTTCGGC
TTCTTCAACCCTGGGCATCATGCTGAGCTACATCCGCTCCAAGAAGCTGGAGCACT
CGAACGACCCATTCAACGTCTACATCGAGTCCGATGCCTGGCAAGAGAAGGACA
AGGCCTATGTCCAGGCCCCGGTCTGGAGAGCTACAGGTGCTGCTATGTCGTTGA
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35 CCCATGAACCCCACTGGCTAAA

SEQ ID NO: 499

>14852 BLOOD 474647.3 M27492 g186289 Human interleukin 1 receptor mRNA, complete
cds. 0

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ATAACCAACATCAGCTCAGCAGGCTTCATTTGGGAAAAGAAACCTTGTCTGGATTA
CCCCGACATTCTCCACCTCCTGGGAGGCCAGCCATTCCCAAATGCCCAAGGATG
AAGAACGGAGACGGTAGACGCACCCTCTGAAGATGGTGAAGTCCCTCCTGAGAAG
45 CTGGACCCCTTGGTAAAAGACAAGGCCTTCTCCAAGAAGAATATGAAAGTGTTA
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CAAGGAACGTGAAGAAAAAATAATTTTAGTGTCATCTGCAAATGAAATTGATGT
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GATGACAGCAAGACACCTGTATCTACAGAACAAGCCTCCAGGATTTCATCAACAC

AAAGAGAAGCTTTGGTTTGTTCCTGCTAAGGTGGAGGATTCAGGACATTACTATT
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GGAGAATGAGCCTAACTTATGTTATAATGCACAAGCCATATTTAAGCAGAACT
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5 GAAAATAATGAGTTACCTAAATTACAGTGGTATAAGGATTGCAAACCTCTACTTC
TTGACAATATACACTTTAGTGGAGTCAAAGATAGGCTCATCGTGATGAATGTGGC
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35 NNN
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SEQ ID NO: 500

>14870 BLOOD 470771.8 J05038 g190823 Human ras-related C3 botulinum toxin substrate (rac) mRNA, complete cds. 0

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 5 CGCCTCCCGTGAAGAAGAGGAAGAGAAAATGCCTGCTGTTGTAAATGTCTCAGC
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 10 CCCTAAAATGACAAGCCTTCTTAAAGCCTTATTTTTTCAAAGCGCCCCCCCCATT
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 25 AGTCGCTAACTTAGTAAGTGCTTTTCTTATAGA'ACCCCTTCTGACTGAGCAATAT
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SEQ ID NO: 501

>14871 BLOOD 232589.59 AF077208 g4679029 Human HSPC022 mRNA, complete cds. 0

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 40 CGCTCTCCTATCCACAGACGGACGTCTTCTCATCTGCTTCTCCCTCGTCAGCCCA
 GCCTCTTATGAGAACGTCCGCGCCAAGTGGTTCCCGAGAAGTGCGGCACCACTGCC
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 45 CACCCAGAGAGGCCTGAAAACCGTGTTTCGACGAGGCCATCCGGGCCGTGCTGTG
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5 CTTACAGGGATGGGGCTCTTACTCCCTCCTGAGGCCAGCTGCTCTAATATCGATGG
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SEQ ID NO: 502

15 >14873 BLOOD 462958.2 M30471 g178133 Human class III alcohol dehydrogenase
(ADH5) chi subunit mRNA, complete cds. 0
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45 GAAGCAGGGCAGTGGTGGGTGTCTGAAACCTCAGAAACATAACGTTGAACTTTT
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SEQ ID NO: 503

25 >14882 BLOOD 113621.5 AL110197 g5817115 Human mRNA; cDNA DKFZp586J021
(from clone DKFZp586J021). 0
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40 ACTTTCAACAACTCTTGTGTG

SEQ ID NO: 504

>14911 BLOOD 337076.6 M36089 g340396 Human DNA-repair protein (XRCC1) mRNA,
complete cds. 0

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30 TCAGAAGGACAGGACAATGGGGCGGAAGATTCTGGGGACACAGAGGATGAGCT
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CACCAGGAGCCTCCTGATCTGCCAGTCCCTGAGCTCCCAGATTTCTTCCAGGGCA
AGCACTTCTTTCCTTACGGGGAGTTCCCTGGGGACGAGCGGCGGAAACTCATCCG
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GCTATAC

40

SEQ ID NO: 505

>14916 BLOOD 337528.6 M37763 g189300 Human neurotrophin-3 (NT-3) gene, complete
cds. 0

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TATTTTGGCACGAGGGGAGCCACTGAAGGACTACCCTACCCTTGCGAGGGACCG
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AACCCCATCAGCCAGGATAATGATGAGATCTTACAGGTGAACAAGGTGATGTC
CATCTTGTTTTATGTGATATTTCTCGCTTATCTCCGTGGCATCCAAGGTAAACA
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20

SEO ID NO: 506

[illegible]

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25 GCAGTAACAGCCAACCCTTAGCCATTGCTAAGGGCAGAGAACTGGTGGAGCCTT

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30 . CCCTTTGAGGGAGCAAATGAACCTGATCAAGTTTCATTAAAAGAAGACATTGAC

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35 ACTATACCCGCCTTAGAAAACAAATGGCTGTAAAGAAATATTTGAACTCAATTCT

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5

SEQ ID NO: 507

>14933 BLOOD 332882.1 X58377 g22952 Human mRNA for adipogenesis inhibitory
factor. 0

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15 CCAGCTGACGGGGACCACAACCTGGATTCCCTGCCACCCTGGCCATGAGTGCA
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25 GGGGGGCATCTGTGCCTTATTTATACTTATTTATTTTCAGGAGCAGGGGTGGGAGG
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30 GACAGAGAACAGGGAATTAATGTGTCATACATATCCACTTGAGGGCGATTGT
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35 NNN
NN
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40 NNNNNNNNNNNNNNAGGTCTTCAATAAATATTTAATGGAAGGTCCACAAGTCACC
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45 ATCCTGNN
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5 SEQ ID NO: 508

>14948 BLOOD 351209.16 X59960 g402620 Human mRNA for sphingomyelinase. 0

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10 AAGCGCGACAATGCCCCGCTACGGAGCGTCACTCCGCCAGAGCTGCCCCAGGTC
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25 GGGCCAGCCGGCCCTTTTGATATGGTGTACTGGACAGGAGACATCCCCGCACAT
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45 AGGGCCCCAGGGCCACATTTGGGAAAGTTCTTGATGTAGGAAAGGGTGAAAAA
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TGTA CTGCTGCTGCGACCTGATGCTGCCAGTCTGTTAAAATAAAGATAAGAGACT
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5 SEQ ID NO: 509

>14954 BLOOD 289783.4 M38694 g339561 Human transforming growth factor-beta (tgf-beta) mRNA, complete cds. 0

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25 GCACAGAGACTGGAGCGACGGAGACCGTCAACGCCCTCAGAGGCCCGCGGTGCTGG
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10 AAGCCCGAGGAGGACTGCGGCGACGGCGGCGGCTGCTCCGTGCGGCCGGGGCTC
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SEQ ID NO: 510

>14959 BLOOD 995976.15 M25295 g186738 Human keratinocyte growth factor mRNA,
complete cds. 0

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20 SEQ ID NO: 511

>14966 BLOOD 153659.5 X52015 g32576 Human mRNA for interleukin-1 receptor

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SEQ ID NO: 512

>15111 BLOOD 350447.18 M14333 g181171 Human c-syn protooncogene mRNA,
complete cds. 0

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SEQ ID NO: 513

>15354 BLOOD 337518.7 Z32765 g525231 Human CD36 gene exon 15. 0

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40

SEQ ID NO: 514

>15389 BLOOD gi|1186305|gb|N45139.1|N45139 yz13g11.s1

Soares_multiple_sclerosis_2NbHMSP Homo sapiens cDNA clone IMAGE:282980 3',

mRNA sequence

45

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SEQ ID NO: 515

>15418 BLOOD GB_N46975 gi|1188141|gb|N46975|N46975 yv28f12.r1 Soares fetal liver
spleen 1NFLS Homo sapiens cDNA clone IMAGE:244079 5', mRNA sequence [Homo
sapiens]

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SEQ ID NO: 516

>15620 BLOOD 238262.4 Incyte Unique

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SEQ ID NO: 517

>15743 BLOOD Hs.75277 gnl|UG|Hs#S1569956 Homo sapiens mRNA; cDNA
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/gi=4884349 /ug=Hs.75277 /len=3312

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5 SEQ ID NO: 518

>15833 BLOOD GB_N63635 gi|1211464|gb|N63635|N63635 za16c12.s1 Soares fetal liver
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PROTO-ONCOGENE SERINE/THREONINE-PROTEIN KINASE (HUMAN);, mRNA
sequence [Homo sapiens]

10 TTTTTTCCAGGTTAGAATGCGCATCTTTCAAAAAAAAAAAAAAAAAACAGGTAAA
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SEQ ID NO: 519

>15915 BLOOD 233764.7 Y12711 g6759555 Human mRNA for putative progesterone
binding protein. 0

20 GCCTAGCGCGGCCCAACCTTTACTCCAGAGATCATGGCTGCCGAGGATGTGGTGG
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SEQ ID NO: 520

>15974 BLOOD 981864.1 Incyte Unique

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SEQ ID NO: 521

>16020 BLOOD Hs.30211 gnl|UG|Hs#S2005168 EST382554 Homo sapiens cDNA

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SEQ ID NO: 522

>16166 BLOOD 346280.34 AB020692 g4240258 Human mRNA for KIAA0885 protein,

20 complete cds. 0

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SEQ ID NO: 523

>16184 BLOOD 237729.6 AL117521 g5912037 Human mRNA; cDNA DKFZp434P0735
(from clone DKFZp434P0735). 0

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SEQ ID NO: 524

>16303 BLOOD gi|1443464|gb|N90137.1|N90137 zb17h09.s1 Soares_fetal_lung_NbHL19W

45 Homo sapiens cDNA clone IMAGE:302369 3' similar to gb:X17576 CYTOPLASMIC

PROTEIN NCK (HUMAN);, mRNA sequence

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SEQ ID NO: 525

>16305 BLOOD 474565.9 M18391 g339716 Human tyrosine kinase receptor (eph) mRNA,
complete cds. 0

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SEQ ID NO: 526

35 >16466 BLOOD Hs.6820 gnl|UG|Hs#S2451360 601487048F1 Homo sapiens cDNA, 5' end
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5

SEQ ID NO: 527

>16524 BLOOD 474681.7 D50525 gl167502 Human mRNA for TI-227H. 0

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25 TCTGCTGCTTGTACTGGTGCTGTACTTTTCTGACTCTCATTGACCATATTCACG
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10 AACCCACACCTCACCCACTAGGACTCAATGTTTACAACAGGAAGGACCATTGCT
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15 AAGAAGAAAAGTTTCCACTGTACTTAAATTTACAGCTGACTCAAATTGCCTCAC
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40 SEQ ID NO: 528

>16759 BLOOD GB_R09836 gi|761792|gb|R09836|R09836 yf30b12.r1 Soares fetal liver
spleen 1NFLS Homo sapiens cDNA clone IMAGE:128351 5', mRNA sequence [Homo
sapiens]

45 AAGATCACAAAGGTTTACATCTGGCACAAACGTAGTANACCTGCCAATTGCGGAC
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TTTTATAGGACCACCAGAATATTGGAAGAGGGAATGCAGTAGCATGGGATAGTT
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SEQ ID NO: 529

5 >16991 BLOOD 978861.1 Incyte Unique
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10 GACATGAACCGCCTCATCATGAACTACCTGGTCACAGAGGGCTTTAAGGAAGCA
GCGGAGAAGTTTCGAATGGAATCTGGAATCGAACCTAGTGTGGATCTGGAAACA
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SEQ ID NO: 530

>17028 BLOOD GB R25895 gi|782030|gb|R25895|R25895 yh43f12.r1 Soares placenta

453

SEQ ID NO: 531

>17066 BLOOD GB_R27082 gi|783217|gb|R27082|R27082 yh52b06.r1 Soares placenta
Nb2HP Homo sapiens cDNA clone IMAGE:133331 5', mRNA sequence [Homo sapiens]
GCACCGCACTGCCGCTCCTGACTGCCCCCTATCCCCGCAGCCCCTGTGCCGGATT
5 TCATTTCCCTCCTCTCTCCAGGGTACCTGGCNCCCAGCACTCTCCCATCTGTTCT
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TGCCCAAGTACCCCTGCAGGATGAAGGGCAGGCCGGCCCTTGATGTGCCATTTCT
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SEQ ID NO: 532

>17168 BLOOD GB_R33030 gi|788873|gb|R33030|R33030 yh70d06.s1 Soares placenta
Nb2HP Homo sapiens cDNA clone IMAGE:135083 3' similar to gb:D16234 PROBABLE
PROTEIN DISULFIDE ISOMERASE ER-60 PRECURSOR (HUMAN);, mRNA sequence

[Homo sapiens]

TTTTTTTTTAAAGGGGTCTCATTTATTGTCACTGTTCCAAATGTACAAAAAAATT
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SEQ ID NO: 533

>17191 BLOOD 445041.11 X15480 g31947 Human mRNA for anionic glutathione S-
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SEQ ID NO: 534

>17309 BLOOD 994439.4 S78569 g1042081 laminin alpha 4 chain [Human, fetal lung,
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SEQ ID NO: 535
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>17504 BLOOD 238178.2 Incyte Unique

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>17691 BLOOD 327226.7 Incyte Unique

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20 CATACTAGGAAAGATTTACACAATAGATAATCATCTTAATGTGAAAGATATTTG
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25 SEQ ID NO: 543
>17862 BLOOD 207683.2 M83751 g178990 Human arginine-rich protein (ARP) gene,
complete cds. 0
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30 CTCGCGGCTCCTGACCAATGGGGAAGTGGCATGTGGGAGGGCGCCGGGGTTCCC
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40 CAAGCAGATCGACCTGAGCACAGTGGACCTGAAGAAGCTCCGAGTTAAAGAGCT
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45 GGCTCCTGACAATACTGTATCAGATGTGAAGCCTGGAGCTTTCCTGATGATGCTG
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SEQ ID NO: 544

>17898 BLOOD 064333.4 X03663 g29899 Human mRNA for c-fms proto-oncogene. 0

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25 AGGCTCTTTGGGGCTAGACAGACTGGCAGAGAGTGAGATCTCCCTCTCTGAGAG
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CCACAGCCTCACCCCTCCCACCCCCATACTGGTACTGCTGTAATGAGCCAAGTGG
CAGCTAAAAGTTGGGGGTGTTCTGCCAGTCCCGTCATTCTGGGCTAGAAGGCAG
30 GGGACCTTGGCATGTGGCTGGCCACACCAAGCAGGAAGCACAACTCCCCAAG
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SEQ ID NO: 545

35 >17915 BLOOD GB_R93149 gi|967315|gb|R93149|R93149 yq15g08.s1 Soares fetal liver
spleen 1NFLS Homo sapiens cDNA clone IMAGE:197054 3', mRNA sequence [Homo
sapiens]
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40 AGGTTTATTTTATTTTACTTTTAAAATCACTATTCTGGAAGTTAAAGAAAATGC
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45

SEQ ID NO: 546

>17952 BLOOD 337221.6 Incyte Unique
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 5 TTGGAATTC AATGTGGTTGTGAATCAAACCTTAAGGAAGGAACGTTAAATAGCA
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35

SEQ ID NO: 547

>18005 BLOOD 442042.5 Z70293.1 g1296611 Human mRNA for chemokine CC-2 and CC-3.0

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5 GCGGCAAGTCTGTGCCAAACCCAGTGGTCCGGGAGTTCAGGATTGCATGAAAAA
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SEQ ID NO: 548

>18046 BLOOD 1326922.7 M12125 g339951 Human fibroblast muscle-type tropomyosin

20 mRNA, complete cds. 0

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25 CCCACCCCCCACCAGCCATGGACGCCATCAAGAAGAAGATGCAGATGCTGAA
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40 AGTGCCAAGGAGGAGAACGTCGAGATTCACCAGACCTTGGACCAGACCCTGCTG
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45 SEQ ID NO: 549

>18061 BLOOD 227748.5 M74826 g182931 Human glutamate decarboxylase (GAD-2)

mRNA, complete cds. 0

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45 SEQ ID NO: 550

>18101 BLOOD 351841.7 U22384 g733134 Human lysyl oxidase gene, partial cds. 0
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35 AGCCAAAATGACTTTGAACTGAAACTTTTCTAAAGTGCTGGAACCTTAGTGAAAC
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45 TTTGCCAAAGATACAATTTTCTTGTGCTGACATAAAAAATCACACAAACAAGTCCCCC
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 10 GAATAGCTTCTTTGATGTACCTCTTTGCCTTAAATTGCTTTTTAGTTCTAAGATTG
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 TCTACAGATTTTCAAGTCTATCATTTTATTGATTCTTAAGCTTGATTAAAAAACTAG
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 15 TTTTATCTGTCTATCCATCCATCATCATTTGAAGGCCTAATATATGCCAAGTACTC
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 CATGTCTATGAAATTTCAATTTTAAAGCACTATTGTTTTTCATGACCATAATTTATT
 TTTAAAAATAAATTAAAGGTTAATTATATGCATGTATGTATTTCTAATAATTAAA
 20 AATGTGTTCAATCCCTGAAATGTCTGCCTTTTAAATATAACACCTACTATTTGGTT
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 ATATGAAEATTCATCCCCC

SEQ ID NO: 551

25 >18105 BLOOD 350513.1 M95167 g703094 Human dopamine transporter (SLC6A3)
 mRNA, complete cds. 0
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 GCGTGCAAAGCCCAGGCCCGGGCGGCCAGACCAAGAGGGAAGAAGCACAGAAT
 TCCTCAACTCCCAGTGTGCCCATGAGTAAGAGCAAATGCTCCGTGGGACTCATGT
 30 CTTCGCTGGTGGCCCCGGCTAAGGAGCCCAATGCCGTGGGCCCCGAAGGAGGTGG
 AGCTCATCCTTGTCAAGGAGCAGAACGGAGTGCAGCTCACCAGCTCCACCCTCAC
 CAACCCGCGGCAGAGCCCCGTGGAGGCCAGGATCGGGAGACCTGGGGCAAGA
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 35 TGCTCTTCATGGTCATTGCTGGGATGCCACTTTTCTACATGGAGCTGGCCCTCGGC
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 40 TGACTCCAGTGGAGACAGCTCGGGCCTCAACGACACTTTTGGGACCACACCTGCT
 GCCGAGTACTTTGAACGTGGCGTGCTGCACCTCCACCAGAGCCATGGCATCGACG
 ACCTGGGGCCTCCGCGGTGGCAGCTCACAGCCTGCCTGGTGTGCTGGTCATCGTGCT
 GCTCTACTTCAGCCTCTGGAAGGGCGTGAAGACCTCAGGGAAGGTGGTATGGAT
 CACAGCCACCATGCCATACGTGGTCTCACTGCCCTGCTCCTGCGTGGGGTCACC
 45 CTCCCTGGAGCCATAGACGGCATCAGAGCATACCTGAGCGTTGACTTCTACCGGC
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 CCGGCTTCGTCGTCTTCTCCTTCCTGGGGTACATGGCACAGAAGCACAGTGTGCC

CATCGGGGACGTGGCCAAGGACGGGGCCAGGGCTGATCTTCATCATCTACCCGGA
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10 GACCCCCCCTACTACGGAGCCTACATCTTCCCCGACTGGGCCAACGCGCTGGGCTG
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25 AGTCTGTTTCAGAGGCATTGGAGGATGGGGGTCTGGTATGTCTCACCAGGAAATT
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30 GCCCCCACAGGAGCGTGTACTACCCACAGACGCATGCAGGGCCCCCACAGGAGC
GTGTACTACCCACAGGACGCATGCAGGGCCCCCACTGGAGCGTGTACTACCCAG
GACGCATGCAGGGCCCCCACAGGAGCGTGTCTATCCCCGGACCGGACGCATGC
AGGGCCCCCACAGGAGCGTGTACTACCCACAGGACGCATGCAGGGCCCCCACAGG
AGCGTGTACTACCCACAGGATGCATGCAGGGGCCCCCACAGGAGCGTGTACTACCC
35 CAGGACGCATGCAGGGCCCCCATGCAGGCAGCCTGCAGACCACACTCTGCCTGG
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CGTGTGGGTCCCTAAGCACAATAAAAGACATCCACAATGGAAAAAAAAAAGG
AATTC

SEQ ID NO: 552

- 5 >18166 BLOOD 350204.2 U07695 g495472 Human tyrosine kinase (HTK) mRNA,
complete cds. 0
- 10 GCGCCCTGGGGCCGAGGCCACCGGGAAGGTGAATGTCAAGACGCTGCGTCTGGG
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GCCCTGCTATCCCTGCACCTCTTCTACAAAAAGTGCGCCCAGCTGACTGTGAACC
TGACTCGATTCCCGGAGACTGTGCCTCGGGAGCTGGTTGTGCCCCTGGCCCGGTAG
CTGCGTGGTGGATGCCGTCCCCGCCCTGGCCCCAGCCCCAGCCTCTACTGCCAG
CACGCTCCGGGCCCCGCCGCCCGCGCGCGGAACAGACGCGGGGCCACACTTGG
CGCCGACGACCGGTGCCCCGCACGCTCGCATGGGCCCCGCGCTGAGGGCCCCGAC
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15 GGGGGGCGAGGGCCCCCAAACCTCAGTTCGGATCCTACCCGAGTGAGGCGGCGC
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20 CTTTCGCACAGGTTGGGTCCCACGGCGGGGCGCCGTCCACGTGTACGCCACGCTGC
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25 CTGCGTCTGGGACCGCTCAGCAAGGCTGGCTTCTACCTGGCCTTCCAGGACCAGG
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40 TCTGACATCCGGGTGACGCGGTCTCACCCAGCAGCTTGAGCCTGGCCTGGGCTG
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45 TGGATGAGAGCGAGGGCTGGCGGGAGCAGCTGGCCCTGATTGCGGGCACGGCAG
TCGTGGGTGTGGTCTCTGGTGGTTCATTGTGGTTCGAGTTCTCTGCCTCAGG
AAGCAGAGCAATGGGAGAGAAGCAGAATATTCGGACAAACACGGACAGTATCT
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 30 TTCCCTTGTAATGCCCTCCCCAGCTGCTGCCTTCATATTGAAGGTTTTTGAGT
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 35 GGGTGTGGGGTGAGGTAGTGAAGAGGGCGGTAGTTGGTGGTGAACCCAGAAAC
 GGACGCCGGTGCTTGGAGGGGTCTTAAATTATTTAAAAAAGTAACCTTTTGT
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SEQ ID NO: 553

40 >18214 BLOOD 407199.2 AF154830 g5020419 Human carbamyl phosphate synthetase I
 mRNA, complete cds. 0
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10 ACCCAGCTCTTGCAGAACCACTAATTCAGAATGTCAGAAAGATTTTGGAGAGTG
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25 GTGATTAACCTTCCCAACAACAACACTAAATTTGTCCATGATAATTATGTGATTC
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35 TTTAAGATACTCTATTTTTTAAAACACTATCTGCAAACCTCAGGACACTTTAACAGG
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SEQ ID NO: 554

>18219 BLOOD 1143363.1 AF031425 g2623890 Human galectin 3 (LGALS3) gene, exon 6, and complete cds. 1e-54

5 GATTATATCATGGTATATGAAGCACTGGTGAGGTCTATGTCACCAGAAATTCCCA
GTTTGCTGATTTTCATTGAGTTTTTTAAACCCGATGATNGTACTGCAACAAGTNAGC
ATNNGTCACTGCAACCNAACNNGNGGGGGGGNAGGTNCACCCNNNNNTNTTTTT
TGAAAGGGTTCCCATTTTCNAANGGGGAAACCGNTNTTTTTCTTCCCTNCCCNGT
TATTATCCAGCTTTGTATTGCAAACAATGACTCTCCTGTTGTTCTCATTGAAGCGT
10 GGGGTTAAAGTGGGAGGGCAACATCATTCCCTCTTTGGGAAATCTAAGGCAATTC
TGTTTGCATTGGGGC

SEQ ID NO: 555

>18229 BLOOD 400534.5 L22342 g402204 Human nuclear phosphoprotein mRNA, complete cds. 0

15 GCCCAGCCTCCTCACTAGCACTGTGCAAGTGGCCAGTGACAACCTGATCCCCCAA
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CAGAGATAAGAGATAAATTCTCCAGAACCAAATGACCCAGAAGAGCCCCAGGAGG
TGTCACGACACCTTCAGACAAGAAAGGAAAGAAAAGAAAAGATGTATCTGGT
20 CAACTCCAAAAAGGAGACATAAGAAAAAAGCCTCCCAAGAGAGATCATTGATG
GCACTTCAGAAATGAATGAAGGAAAGAGGTCCCAGAAGACGCCTAGTACACCAC
GAAGGGTTCACACAAGGGGGCAGCCTCACCTGGGCATGGCATCCAAGAGAAGCTCC
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TCATGATGAGGGTCCAAAAGGCAAGAAGCTAAATGTGCCCGAAAGTCCAGATTGA
25 AAGAAAAGAAAAGGAGAAAGATATCTGTTCAAGCTCAAAAAGGAGATTTCAG
AAAAATATTCACCGAAGAGGAAAACCCAAAAGTGACACTGTGGATTTTCACTGT
TCTAAGCTCCCCGTGACCTGTGGTGAGGCGAAAGGGATTTTATATAAGAAGAAA
ATGAAACACGGATCCTCAGTGAAGTGCATTCGGAATGAGGATGGAAGTGGTTA
ACACCAAATGAATTTGAAGTGAAGGAAAGGAAGGAACGCAAAGAAGTGGAA
30 ACGGAATATACGTTGTGAAGGAACGACCCTAGGAGAGCTGCTGAAGAGTGGACT
TTTGCTCTGTCCTCCAAGAATAAATCTCAAGAGAGAGTTAAATAGCAAGTGAATT
TCTACTACCCTCTCAGTCACCATGTTGCAGACTTTCCCTGTCTGGAGGCTCACCTT
AGAGCTTCTGAGTTTCCAAGCTCTGAGTCACCTCCACATTTGGGCATGGCATCTT
CAAAAACAATTAATTTGCATAGTTAATTTGGGATGGGGAAGCAAATGACTCTAAA
35 ATAAATCTCAAGAGAGAGTTCAATAGCAAGTGAATTTCTACTACCCTCTCAGTCA
CCATGTTGCAGACTTTCCCTGTCTGGAGGCTCACCTTAGAGCTTCTGAGTTTCCAA
GCTCTGAGTCACCTCCACATTTGGGCATGGCATCTTCAAAAACAATTAATTTGCAT
AGTTAATTTGGGATGGGGAAGCCAATGACTCTTAAAT

40 SEQ ID NO: 556

>18298 BLOOD 406471.1 X52638 g35502 Human mRNA for 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase (EC 2.7.1.105, EC 3.1.3.46).

0TATTTTCATACGACTCACTATAGGGAATTTGCCCCGAAACGGAATTCGGGCACGA
GCCCATTTACACTGAAGATCGATCTGAAACTCAGCACCAGCGAAATCCAGAACTT
45 GCCTGTCTCCATGGCTGGTTTTAATTTCCCCATTCTGCAGTGGCTTGTTAATATTA
GTTCTGACCTTTGGGGCAAGGTGAACACATGGTTGGACTGAAGAGAAAAGGCTT
CTGGTGGCTCAGGAACGTCTTTGGCAACTACAACAGCTGATATTTCAACAGAGCA
CATACATCCCCCACTTAACAAGGGTACGTCTCAGCCTTCTCAGGGAACCAACGA
ACACCTCCAGGCTTCCTCTTTGATGCCACCCACTGGACCTGCCTTGGGGGTCTGT

AAATGCAAGAGAACCGAGTGTTGGATAATTAGCGATGGAAGAAAAAACCTCTAG
AATAAAAGCATCCATACCCAGTTTACCAATTCCCCACAATGGTGATCATGGTG
GGTTTACCAGCTCGAGGCAAGACCTATATCTCCACAAAGCTCACACGATATCTCA
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5 CAGTGAGCTACAAGAACTATGAATTCCTTCTTCCAGACAACATGGAAGCCCTGCA
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GACGGTCACTGATCCTGCAGTTTGCAAAAGAACATGGTTACAAGGTGTTTTTCAT
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10 ACTTGGCAGCCCTGATTATATAGACTGTGACCGGGAAGGTTCTGGAAGACTTT
CTAAAGAGAATTGAGTGCTATGAGGTCAACTACCAACCCTTGGATGAGGAACTG
GACAGCCACCTGTCCTACATCAAGATCTTCGACGTGGGCACACGCTACATGGTGA
ACCGAGTGCAAGGATCACATCCAGAGCCGCACAGTCTACTACCTCATGAATATCCA
TGTCACACCTCGCTCCATCTACCTTTGCCGACATGGCGAGAGTGAACCAACATC
15 AGAGGCCGCATCGGAGGTGACTCTGGCCTCTCAGTTCGCGGCAAGCAGTATGCCT
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GCAGTGGAAGGCCCTGAATGAGATTGATGCGGGTGTCTGTGAGGAGATGACCTA
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20 ATATCGCTACCGCTATCCCAAGGGAGAGTCCTATGAGGATCTGGTTCAGCGTCTG
GAGCCAGTGATAATGGAGCTAGAACGACAGGAGAATGTACTGGTGATCTGCCAC
CAGGCTGTCATGCGGTGCTCCTGGCCTATTTCCCTGGATAAAAGTTTCAGATGAGC
TTCGGTATCTCAAGTGCCCTCTGGACACAGTGCTCAAACTCACTCCTGTGGCTTAT
GGCTGCAAAAGTGGAATCCATCTACCTGAATGTGGAGGCCGTGAACACACACCGG
25 GAGAAGCCTGAGAATGTGGACATCACCCGGGAACCTGAGGAAGCCCTGGATACT
GTCCCAGCCCACTACTGAGCCCTTTCCAAGAAGTCAAACTGCCTGTGTCCTCATC
GCCTTCCACCTTTAGGAAATGCTATCTTTGCTCTTCTCCTACTCTGCCTTGGCCTC
ACTGAGGCACCCCACTTCCAGTGAAGAAGTCTCCGCAACTCCCAAACAAGCCTC
GCTTGCTGGCCGCAACCAAGGAGCTATCTAGCTCTGGAGGAACTTTCTTTCTTA
30 ATTCCTATTCTCTGACGAATAAAGACTTACTGCCTACAAGAGG

SEQ ID NO: 557

>18501 BLOOD 201402.1 AL080184 g5262661 Human mRNA; cDNA DKFZp4340071
(from clone DKFZp4340071). 0

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40 AGCCAGAGGGGTGAACTGGAGTGATCGAGGAGTAGGGCTATTTTAAATGGGAGT
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CCACCGTGAGTGGTGATGGCAAGCATCTTTTCTTCGGCGTGGGGGGTACCCCTT
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45 AGCAGTCTTTGTTGGTATAAATCATGCCAGTGCTAAAGTGGAATTCGATAACAAC
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TGCAGTTTTCCCCTTGATTGGCGTGTGTGTATATATGGAATAAATATATATATACA
5 CACACACATATTACTGCAATCTGTGATTGCTTCATCTGTAAATCAGTTGTAAACCT
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10 ACAAAAAGCATATGGGGAGCTGGTATTTTCTCTTTAGCTTACTGTTGTGCCTTTTT
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15 GTTTTGGTTCTAAATTTGGAACAGTATATATAATTAAAAGTAAGGAACATTAGAG
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CAAAAGTGCAAAGTGATATTAGCTGTCATCTGCAATACAGAATCTCATTGCTTTT
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20 GTTCAGTCATATGACTCGTTGGTGGAATGCCTAGGTTTTTCATCTTACATGCAGTC
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25 AGTACTCTGGGGTGTGAGTATGTGTGCACACGTGTGTGTTGGAGTGAGTGAGAG
AATGTGTCTGTGCATGTGGCCATGCTTTCCTAGAAATGTCAAGTAGATATTTTTACA
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30 TATTATATCTTCCAGATAATGTTATTCATTTAGAACAAATAAGGTATATTTTTTAG
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35 AAATAAATATAGTNGACCCTTGAACAACAGGAGTTAGGGGCACCACTCCCCAA
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40

SEQ ID NO: 558

>18526 BLOOD 238447.3 Incyte Unique

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45 TTTGTTTTTAATTTTCAAGTTCTGCGAGCAGCTGTGCCCAAGAATGTGTCTGTGGC
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CGTCCGGCCCGAGGTGACGTGGTCCTTCAGCAGGATGCCTGACAGCACCTACCT
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GTGTGACCTGGCTAGAACCAGACTACCAGGTGTACCTGAATGCTTCCAAGGTCCC
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5 TGGGGAGGCGAATGTCCGATTCACGGTTTCGTGGTACTACAGGATGAACCGGCG
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10 CAGCTGGGTGAAAAGCAAGGATGTCTTCTCCAAGCCTGTTAACATATTTTGGGCA
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20 TGTTCGTATCATCACTGTCGAGGGAGCAGCACTGGATCCAGATGACATGGCCTT
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25 TCACCAACAGGTTCTGGCAGAAGGAGGCAGAGATCCACTCCAAGCCCGTTTTA
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30 TAGGAGCAATTGGGNCAAGAAGAAGCCCAGTGATATTTTTTAAACAAAGTGTGT
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45 ACTGTGTCTCAGGGGACTCCAGGAAGAGCAGAAGAGGGATCCACGAAGTTATT
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5 GAATAGGAGAGTAGACAGAGATCTTCCACATCCCAGGCTTCTGCTGCTGCTTTAA
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25 ATGCACTCTTTTGTGTACCAAATAGGGCTCCCCACCCACCCCTGCGACAAGTG
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40 CCATATCCAATGTTATATGAACTAATTGTATTGTTTTATACTGTGACCACAAATAT
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SEQ ID NO: 559

>18550 BLOOD 234287.1 Incyte Unique

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5 TCTGGTGCTTTTCTTCTCTCAAAATGGATCCGATAAATATTTGAATAGAGCAGATT
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25 AAAATCAATCAGATTTATTGTACCTACAAAAA

SEQ ID NO: 560

>18555 BLOOD 200000.3 AF054175 g3341993 Human mitochondrial proteolipid 68MP

homolog mRNA, nuclear gene encoding mitochondrial protein, complete cds. 0

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40 CCATCATTGTGAAATAATTACCTCAGTTGTACAGGACTTGGTGATCAGGATCCAG
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TAAA

SEQ ID NO: 561

45 >18576 BLOOD 481208.4 U60207 g1477790 Human stress responsive serine/threonine

protein kinase Krs-2 mRNA, complete cds. 0

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15 GGAGTGTCAATACTGCGAGACTTAATTAATGAAGCCATGGATGTGAAACTGAAA
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20 GGAAGAGGAAGGAACCTATGAAAAGAAGGGATGAGACCATGCAGCCTGCGAAAC
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25 GTACCAGTCCAAGCGGGAGCCCATCTGGATGCCATAGAGGCTAAGAAGAGACG
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TCGTCTCTCCACAGCACCTTTGTGAACTCAGGAATGTGCGCCAGTGGGAAGGGCT
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30 ATCTCAAAGGATTTATATTGGCGCTTTTAACTCAGAGTTTTAAACCCAGGAACA
GAGACTCCTAGTTGAGTGATAGCTGGGAAAGTTTTACATTGTCTGTTTTCTTCTC
CCAATAGCTTTCAATTGTTCTTTCTGGAAGACTTTTAAAAAATATAAATATGCA
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35

SEQ ID NO: 562

>18601 BLOOD 217961.1 Incyte Unique

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40 TGAAATTATTGAACATTGAAGTGTGAGGCTTGTCTAAGAGCACGTCACCTCCCT
TGACACAGATTCTGCATGTCCTTCCCTCTGGTAGGGATCCTCCAGTTCCTGTTCTC
AGGCGAAGTAACCAGAGGTTCCAGTCTGCTCTTCTGGGAGGAAGACAGA
GCACCTAGTAATAGATTCCCAGGGTACTGATTGGCACCACACATGACTCAGAGG
GGACCTAAGCCCATCAGCAGGCTGCTCTAAGGACCTACCTCAGGGCACTCAGAC
45 AGCCTCACCAATCAGAGGCTCAGGAGAGGGTTTTCTCACTGCCCTCCTTGTGTG
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SEQ ID NO: 563

>18628 BLOOD GB_T96731 gi|735355|gb|T96731|T96731 ye51f02.r1 Soares fetal liver
spleen 1NFLS Homo sapiens cDNA clone IMAGE:121275 5' similar to gb:M24922_cds1
HLA CLASS II HISTOCOMPATIBILITY ANTIGEN, DX BETA CHAIN (HUMAN);,

5 mRNA sequence [Homo sapiens]

NTTCGGCACGGNGGCTCTGCAGATCCCTGGAGGCTTTTGGGCAGCAGCTGTGACC
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GATTTNTTGGTCCAGTTTAAGGGCATGTGCTACTTCACCAACGGGACAGAGCGCG
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10 GACGTTGGGGAGTTCCAGGCGGTGACCGAGCTGGGGCGNACATNCGAGGACTGG
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SEQ ID NO: 564

15 >18649 BLOOD 205772.16 Incyte Unique

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45 SEQ ID NO: 565

>18713 BLOOD GB_T98559 gi|748296|gb|T98559|T98559 ye70f11.s1 Soares fetal liver
spleen 1NFLS Homo sapiens cDNA clone IMAGE:123117 3', mRNA sequence [Homo
sapiens]

AACACTTTAATATTNATGGTGTATCACATAAAAAACAAAGTCATATACTTTTGCA
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GCAGCCCTACAGAGCTTTTGTGTCANTTGAAAAACAAAAAATCCCAACACAG
5 GATGTTCAAAAAGCCTAATTCATAAAAANGACANTTTATTCCNATGTTTAATATAG
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SEQ ID NO: 566

10 >18817 BLOOD Hs.93213 gnl[UG][Hs#S1972075 Human DNA sequence from clone RP1-
291J10 on chromosome 6p21.2-21.33 Contains BAK1 (BCL2-antagonist/killer 1) gene,
ESTs, STSs, GSSs and a CpG Island /cds=(249,884) /gb=Z93017 /gi=5921377 /ug=Hs.93213
/len=2136
GCCGGGTGCCGCTGGCACCTCTATGATCACTGGAGTCTCGCGGGTCCCTCGGGCT
15 GCACAGGGACAAGTAAAGGCTACATCCAGATGCCGGAATGCACTGACGCCCCT
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20 AGCCCAGGACACAGAGGAGGTTTTCCGCAGCTACGTTTTTTACCGCCATCAGCAG
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25 CTGTTTGAGAGTGGCATCAATTGGGGCCGTGTGGTGGCTCTTCTGGGCTTCGGCT
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5 SEQ ID NO: 567

>18899 BLOOD 285978.2 U43431 g1292911 Human DNA topoisomerase III mRNA,
complete cds. 0

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15 AAGATCTATGAATTTGATTATCATCTGTATGGCCAGAATGTTACCATGGTAATGA
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SEQ ID NO: 568

30 >18910 BLOOD Hs.244613 gnl|UG|Hs#S377417 Human signal transducer and activator of
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35 AGA

SEQ ID NO: 569

>18954 BLOOD 475048.3 AF100143 g4323512 Human fibroblast growth factor 13 isoform
1A (FGF13) mRNA, complete cds. 0

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25 GATATGTAAGATTTTGTGCATTCATAATTGTTAAAAATCTGTGTTCCAAAAGTGG
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SEQ ID NO: 570

>18972 BLOOD 263164.34 X74929 g400415 Human KRT8 mRNA for keratin 8. 0

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35 CTGAGAGCTCTCCTACCAAGCAGCAGCTTCTCCGCTCCTTCTAGGATCTCCGCCT
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40 GCATCACCGCAGTTACGGTCAACCAGAGCCTGCTGAGCCCCCTTGTCTGGAGGT
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CAAGATGCTGGAGACCAAGTGGAGCCTCCTGCAGCAGCAGAAGACGGCTCGAAG
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45 GACTCTGGGCCAGGAGAAGCTGAAGCTGGAGGCGGAGCTTGGCAACATGCAGGG
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GCTGAGGTCAAGGCACAGTACGAGGATATTGCCAACCGCAGCCGGGCTGAGGCT
GAGAGCATGTACCAGATCAAGTATGAGGAGCTGCAGAGCCTGGCTGGGAAGCAC
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5 AGCCGGCTCCAGGCTGAGATTGAGGGCCTCAAAGGCCAGAGGGCTTCCCTGGAG
GCCGCCATTGCAGATGCCGAGCAGCGTGGAGAGCTGGCCATTAAGGATGCCAAC
GCCAAGTTGTCCGAGCTGGAGGCCGCCCTGCAGCGGGCCAAGCAGGACATGGCG
CGGCAGCTGCGTGAGTACCAGGAGCTGATGAACGTCAAGCTGGCCCTGGACATC
GAGATCGCCACCTACAGGAAGCTGCTGGAGGGCGAGGAGAGCCGGCTGGAGTCT
10 GGGATGCAGAACATGAGTATTCATACGAAGACCACCAGCGGCTATGCAGGTGGT
CTGAGCTCGGCCTATGGGGGCCTCACAAGCCCCGGCCTCAGCTACAGCCTGGGCT
CCAGCTTTGGCTCTGGCGCGGGCTCCAGCTCCTTCAGCCGCACCAGCTCCTCCAG
GGCCGTGGTTGTGAAGAAGATCGAGACACGTGATGGGAAGCTGGTGTCTGAGTC
CTCTGACGTCCTGCCCAAGTGAACAGCTGCGGCAGCCCCCTCCCAGCCTACCCCTC
15 CTGCGCTGCCCCAGAGCCTGGGAAGGAGGCGCTATGCAGGGTAGCACTGGGAA
CAGGAGACCCACCTGAGGCTCAGCCCTAGCCCTCAGCCACCTGGGGAGTTTACT
ACCTGGGGACCCCCCTTGCCCATGCCTCCAGCTACAAAACAATTCAATTGCTTTT
TTTTTTTGGTCCAAAATAAACCTCAGCTAGCTCTGCCAATGTCAA

20 SEQ ID NO: 571

>19004 BLOOD 083318.1 K00488 g182106 Human enkephalin gene, 5' flank and intron c

(5' end): 0

GGTTGGGGAGCTGTGCCCGCCCTCTTTECCTTCACATTTCAATGCATGGGGTTCGCC
AACAGCGTTCCCTGGTTCTTCTTTGTGAACCCAGTCAATGTCCTGCCTCCCCCGGC
25 TCCCGCTCTCTCGCCCCCTGGTCTGCGGCGTTCTCTCCGGAATCTTGGCCTGGGGCCG
CGGACGCCCAGGAAAAGAGCCGGGTGCCCCAGGCAGCCTCGCGTTGGGGGCGAC
CGCGCCATCCCGGGAA

SEQ ID NO: 572

30 >19039 BLOOD 135014.5 M64925 g189785 Human palmitoylated erythrocyte membrane
protein (MPP1) mRNA, complete cds. 0

GGGCGGTGACTGGCCCAGCCGCACCGCGTCTCCCGCCTTCTCCGCAGCCCCGCAG
GCCCCGGGCCCTGTCATTCCAGCGCTGCCCTGTCTTGCCTTCCAGTGTTCCAGCT
TCTGCGAGATGACCCCTCAAGGCGAGCGAGGGCGAGAGTGGGGGCAGCATGCACA
35 CGGCGCTCTCCGACCTCTACCTGGAGCATTTGCTGCAGAAGCGTAGTCGGCCAGA
GGCTGTATCGCATCCATTGAATACTGTGACCGAGGACATGTACACCAACGGGTCT
CCTGCCCCAGGTAGCCCTGCCAGGTCAAGGGACAGGAGGTGCGGAAAGTGCGA
CTCATACAGTTTGAGAAGGTCACAGAAGAGCCCATGGGAATCACGCTGAAGCTG
AATGAAAAACAGTCCTGTACGGTGGCCAGAAATCTTCATGGTGGCATGATCCATA
40 GACAAGGCTCCCTTACGTTGGGGGATGAGATCCTAGAAATCAATGGCACAAATG
TGACAAATCATTCAGTGGATCAGCTGCAGAAGGCGATGAAAGAAACCAAAGGAA
TGATCTCATTAAGTAATTCCCAACCAGCAAAGCCGTCCTTCTGCACTACAGAT
GTTTCATGAGAGCGCAGTTTGACTATGATCCCAAAAAGGACAAATCTGATCCCTTGC
AAGGAGGCGGGACTGAAGTTTGCTACTGGGGACATTATCCAGATTATCAACAAG
45 GATGACAGCAATTGGTGGCAGGGACGGGTGGAAGGCTCCTCCAAGGAGTCAGCA
GGATTGATCCCTTCCCCTGAGCTGCAGGAATGGCGAGTGGCAAGTATGGCTCAGT
CAGCTCCTAGCGAAGCCCCGAGCTGCAGTCCCTTTGGGAAGAAGAAGAAGTACA
AAGACAAATATCTGGCCAAGCACAGCTCGATTTTTGATCAGTTGGATGTTGTTTC
CTACGAGGAAGTCGTTCCGCTCCCTGCATTCAAGAGGAAGACCCTGGTGCTGATC

GGAGCCAGTGGGGTGGGTGCGAGCCACATTAAGAATGCCCTGCTCAGCCAGAAT
 CCGGAGAAGTTTGTGTACCCTGTCCCATATACAACACGGCCGCCAAGGAAGAGT
 GAGGAAGATGGGAAGGAGTACCACTTTATCTCAACGGAGGAGATGACGAGGAA
 CATCTCTGCCAATGAGTTCTTGGAGTTTGGCAGCTACCAAGGCAACATGTTTGGC
 5 ACCAAATTTGAAACAGTGCACCAGATCCATAAGCAGAACAAGATTGCCATCCTT
 GACATTGAGCCCCAGACCCTGAAAATTGTTTCGGACAGCAGAACTTTTCGCCTTTCA
 TTGTGTTTATTGCACCTACTGACCAGGGCACTCAGACAGAAGCCCTGCAGCAGCT
 GCAGAAGGACTCTGAGGCCATCCGCAGCCAGTACGCTCACTACTTTGACCTCTCA
 CTGGTCAATAATGGTGTGATGAAACCCTTAAGAAATTACAAGAAGCCTTCGACC
 10 AAGCGTGCAGTTCTCCACAGTGGGTGCCTGTCTCCTGGGTTTACTAAGCTTGTAG
 AATGGGGGAACCCACTGTATGCCCTCTCCAGCATTTGGAATTCACCCGCCTTG
 CTTTAAGACAAACAGGGCTGCTCCAAGTAGTTTGTGTGTCAGCTTCCAGCTCTCTG
 CAGCTATCCTAATTCAGCCAGTAAGGTTTCACTCTTCTTGCTCAGGCTCCTGAAGG
 GTTGATTCTCCTGATAGATGGGGCCCCACTGATCTGGATTGAAAAGGATTTCTA
 15 GAAATTGGGGGTAAAGAAGTACTACCAAAATGTAAGTGTAAATCAAGGGTGATGC
 ACAGCAAAAGCAATGGACCCCATCCCTCTAAAGCCTGCCCTCCTTTGCCTTCAAC
 TGTATATGCTGGGTATTTTATTTGTCTTTTTATTTTGGAGAAAGCGTTTTAACTG
 CAACTTTCTATAATGCCAAAATGACACATCTGTGCAATAGAATGATGTCTGCTCT
 AGGGAAACCTTCAAAGCAATAAAAATGCTGTGTTGAAATGCCAGAAAAAAA

SEQ ID NO: 573

>19055 BLOOD_GB_W02116 gi|1274164|gb|W02116|W02116-zc66e09.s1

Soares fetal heart NbHH19W Homo sapiens cDNA clone IMAGE:327304.3; mRNA
 sequence [Homo sapiens]

TTTTTCGGGAGAAGAAAAGCTTTACTGGGAGAAAATACAACAAATTCCAGAGT
 GCATGGTTTTTAGCCACCCCTATCACCCACCAGCAATAGGAACACAGACCACTC
 GATCACCACACATTCCCTACCTCAGGGAGTAAGTACATCAGCCAACATCTNGGTC
 TCNGAGCTGCTGGGAAAAGGGGCAGGAGNAAGAAGTATCTGGNAATACCATTCT
 CTCACTCTNTTCCCCTCCTT

SEQ ID NO: 574

>19319 BLOOD_331040.8 M92449 g190094 Human LTR mRNA, 3' end of coding region
 and 3' flank. 0

STCCTGGAGCTGGAGCGCTTCCTGCCCCAGCCCTTACCAGGCGAGATCCGCGGCA
 35 TGTGTGACTTCATGAACCTCAGCCTGGCGGACTGCCTTCTGGTCAACCTGGCCTA
 CGAGTCCTCCGTGTTCTGCACCAGTATTGTGGCTCAAGACTCCAGAGGCCACATT
 TACCATGGTTCGGAATTTGGATTATCCTTTTGGGAATGTCTTACGCAAGCTGACAG
 TGGATGTGCAATTCTTAAAGAATGGGCAGATTGCATTACAGGAAGTACTTTTAT
 TGGCTATGTAGGATTATGGACTGGCCAGAGCCACACAAGTTTACAGTTTCTGGT
 40 GATGAACGAGATAAAGGCTGGTGGTGGGAGAATGCTATCGCTGCCCTGTTTCGG
 AGACACATTCCCGTCAGCTGGCTGATCCGCGCTGTGGTTCCGAGTTGAGACAAAT
 TACGACCACTGGAAGCCAGCACCAAGGAAGATGACCGGAGAACATCTGCCATC
 AAGGCCCTTAATGCTACAGGACAAGCAAACCTCAGCCTGGAGGCACTTTTCCAG
 ATTTTGTCTGGTGGTTCCAGTTTATAACAAATGATTTTTTAAAAAATGAAATTCCTG
 45 AAGAGCTGCACCTTAAAAAATAAGACAAAGTGAAAGTATTGTATTATGTTACAA
 ACAATGCAGGCTCCTTCCCTCATTTAACTTTACAACCTTGCGAAGTGGGTCCAGGA
 GATTTGGAGTTTGTGGTAAAGCCAGTAATGGGCATTGTCCTGCATTCCCTTCCCTT
 CATGGTTTGCCTCGATCCTCTCTAAGCTTCTATCCTGGCCTGAATAACTCAAAGAT
 AATTGGTCTCAGAGATCAAGCCATATCCTCAGGCCTTATTTCCATCTTCTCATGAT

TCTGCCATCATACCTTTGCTTCTCCGCTAATGAAATGAGCTGGCAAGACCTCTGTT
CATTGTGAAAGTGCTTCTGAAAGAGCCTAAGAAAAAAGGCTCATCTGAAAGAAAT
GGAGAACTCTATTTTCGAACCAAGCCTGTTTGAATGTGTGTTAGTCTGATCTTTGAT
CATGTGTTTCCATGTAATGGGAGTCTCGTTTTTTATAATGTTTCTAACGTTTTATT
5 GAAAAACCTATGGCCCTCCTTCTTTCTCAATAGCTACTTTCTTACTGCTTTTTGAA
AATAATATGCAACCAAATTATTTCTTAATGTCACATAATTAAGTAATAAAATGTC
AAAAGAAATGTTGGCAAGGAGAATAAAAAAATTTCCAAGAAAAA

SEQ ID NO: 575

10 >19391 BLOOD 197556.13 Z50853 g963047 Human mRNA for CLPP. 0
GACCGGGGCGTGCGGAGGGATGTGGCCCGGAATATTGGTAGGGGGGGCCCGGGT
GGCGTCATGCAGGTACCCCGCGCTGGGGCCTCGCCTCGCCGCTCACTTTCCAGCG
CAGCGGCCGCCGAGCGTACACTCCAGAACGGCCTGGCCCTGCAGCGGTGCCTG
CACGCGACGGCGACCCGGGCTCTCCCGCTCATTCCCATCGTGGTGGAGCAGACG
15 GGTCGCGGCGAGCGCGCCTATGACATCTACTCGCGGCTGCTGCGGGAGCGCATC
GTGTGCGTCATGGGCCCCGATCGATGACAGCGTTGCCAGCCTTGTTATCGCACAGC
TCCTCTTCTGCAATCCGAGAGCAACAAGAAGCCCATCCACATGTACATCAACAG
CCCTGGTGGTGTGGTGACCGCGGGCCTGGCCATCTACGACACGATGCAGTACATC
CTCAACCCGATCTGCACCTGGTGCCTGGGCCAGGCCGCCAGCATGGGCTCCCTGC
20 TTCTCGCCGCCGGCAGCCAGGCATGCGCCACTCGCTCCCCAACTCCCGTATCAT
GATCCACCAGCCCTCAGGAGGCGCCCGGGGCCAAGCCACAGACATTGCCATCCA
GGCAGAGGAGATCATGAAGCTGAAGAAGCAGCTCTATAACATCTACGCCAAGCA
CACCAAACAGAGCCTGCAGGTGATCGAGTCCGGCATGGAGAGGGACCGCTAGAT
GAGCCCCATGGAGGCCCAGGAGTTTGGCATCTTAGACAAGGTTCTGGTCCACCCT
25 CCCCAGGACGGTGAGGATGAGCCACGCTGGTGCAGAAGGAGCCTGTAGAAGCA
GCGCCGGCAGCAGAACCTGTCCCAGCTAGCACCTGAGAGCTGGGCCTCCTCTCCA
GAATCATGTGGAGGGGCCAGAGGCCTGCCAGACCCCCAGCTGGGCCCTGCTCAC
CCCTTGTTGCTGGGCTTGGAGGGGCCCTCTTGAGGAACTTTTAATTTGCAGGGGTG
CCCGCTATGGACGGGGCATTCCAGCTGAGACACTGTGATTTTAAATTAATCTTT
30 GTGGTCTTTG

SEQ ID NO: 576

>19403 BLOOD 1144353.1 X12953 g35836 Human rab2 mRNA, YPT1-related and member
of ras family. 0
35 TTCAAGTACATCATAATCGGCGACACAGGTGTTGGTAAATCATGCTTATTGCTAC
AGTTTACAGACAAGAGGTTTCAGCCAGTGCATGACCTTACTATTGGTGTAGAGTT
CGGTGCTCGAATGATAACTATTGATGGGAAACAGATAAAACTTCAGATATGGGA
TACGGCAGGGCAAGAATCCTTTCGTTCCATCACAAGGTCGTATTACAGAGGTGCA
GCAGGAGCTTTACTAGTTTACGATATTACACGGAGAGATACATTCAACCACTTGA
40 CAACCTGGTTAGAAGATGCCCCGCCAGCATTCCAATTCCAACATGGTCATTATGCT
TATTGGAAATAAAAGTGATTTAGAATCTAGAAGAGAAGTAAAAAAGAAGAAG
GTGAAGCTTTTGCACGAGAACATGGACTCATCTTCATGGAAACGTCTGCTAAGAC
TGCTTCCAATGTAGAAGAGGCATTTATTAATACAGCAAAAGAAATTTATGAAAA
AATTCAAGAAGGAGCTTTGACATTAATAATGAGGCCAATGGCATTAAAATTGGC
45 CCTCAGCATNTGTTACCATGCCACACATGCAGGCNATCAGGGAGGCANCAGCTG
GGGCNGCTCTGTTGANTCTGTTTATGCTANTGCCACGGGCTTCTCCCTTATCTTAN
CCTTCCTCTGGNACTGGNTGACCTTTGAAAGGTTTGCCAGAGATTANCCGCAATC
T

SEQ ID NO: 577

>19425 BLOOD gi|1376913|gb|W68044.1|W68044 zd39f04.r1

Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone IMAGE:343039 5', mRNA
sequence

5 AATATTTTCAGCTTCANCCATGTTGTTGGAGATGGAAAGATGGAAGCAGGACAG
AGAAACTGGTCGATTTTCAAGGCCCTGTGAGTGCCTCGTCGTGCGTGTGGCCCCA
GACCTCGGAGAAAGGATCACGCTAAGCGGTGACAAATCCTTGATAGAAGAAGTA
TTTCCAGAGATCCGGCGACGTGATGTGTAACCTCTGTCAATGCAGGCTGGAATCAC
GACTCGACGCACGTCATCAGGTTTCCACTAAATGGCTACTGTCACCTCAACTCAG
10 TCCAAGGTCCTCGAGAGGTTGCAAGCAAAGAAGGATTTGAAATCCGTGGGCTCC
TGTGGGGGAGGAGTAGACTCCGTCCCAAGTTCAGCCGAATACGTCCTTCGGCGG
GAACTTGAGGCGGACCCCCCGTGTACCCTCCGTATCCCGGATAAAGCAAAGAG
CCTCTGGACTAAAATGGACATANTTCTTTAATGCAAAAAAGGAAAACACACACA
AACCNATT

15

SEQ ID NO: 578

>19535 BLOOD 157116.31 Incyte Unique

AAGACCACTAGATTTTCTGGATTTAGAAAGACCTCCTACAACCCCTCAAAATGAA
GAAATCCGAGCAGTTGGCAGACTAAAAAGAGAGCGGTCTATGAGTGAAAATGCT
20 GTTCGCCAAAATGGACAGCTGGTCAGAAATGATTCTCTGTGGCACAGATCAGATT
CTGCCCCAAGAAATAAAATTTCAAGGTTCCAGGCACCGATTCTGCACCGGAGTA
GACTGTGACACCATCGCCACAACAGGCTCGGGTCTGTCTCCCATATGTTACCT
GAGATGGAGCTAATCTTCTCTGTCTGGTGGCATTTTGTCTGCTTATCCAGTCTTC
TACTCGTAGGGCATACCAGCAGATCTTGGATGTGCTGGATGAAAATCGCAGACCT
25 GTGTTGCGTGGTGGGTCTGCTGCCGCCACTTCTAATCCTCATCATGACAACGTCA
GGTATGGCATTTCAAATATAGATAACAACATTGAAGGAACGTCAGATGACCTGA
CTGTTGTAGATGCAGCTTCACTAAGACGACAGATAATCAAATAAATAGACGTCT
ACAACCTTCTGGAAGAGGAGAACAAAGAACGTGCTAAAAGAGAAATGGTCATGTA
TTCAATTACTGTAGCTTTCTGGCTGCTTAATAGCTGGCTCTGGTTTCGCCGCTAGA
30 GGTAACATCAGCCCTCAAAAATACTGTCTCAACAGCTGGAAATATAAAAGATTT
GCAAACCTTCTTTGTTTCTGTCTCTGCATTGTATGCCATTTTATAGTCCACACCCTG
AAAATGTATTTCTTCCAGAAAGTCTGGAGGAAGGACCTATATTTGTAGAAGTAAA
GGTATATTCTGTCACTCAGCTGTATTCAGTCTGAGCAGTTCTGCAGTAACACCT
GCTTAAAATTCTCCCTTTGCAATGTTTGTAAATAGGCTCCAGTTTGTTTTTTAAA
35 AGGAATTTATTTTTGCCTCATCAGTCCACCCAAGTCTGATTCTGAATGGGAGAGAG
TCTGTAGAGAATTGATTTCAGAAAAGTGTCTGTGAAAGAAAAACAATTATTTGTC
CTGTTTCTCAAACAGTGTTAAGCAGTTTGTGTAATAGACATTTTGCATCGACACT
TCAACATTAACACTTTGAAAGTCATGGTCTGGTGCCAGATTTAAGAAACTCGAAC
CACCTAATATTTTATAACCTTCTTCATTAGGTACTTGTACAGATTAATTTCTAACA
40 TTGCAGCAGTTTCATATGTGTGCAATATGTGCATTCTTTCATTTTAGTTTTGCACT
TGGTTTTCTATAAAGTACGTTTTTACTCAGTTCATGCGTGAACAATTTAAAAAAC
GACAGAATAAGGTACAAATGTAGTGTATTTAATAAACTGTCAACCAAAGA

SEQ ID NO: 579

45 >19539 BLOOD 238238.1 Incyte Unique

CTTTTTTTATTTTTTATCTCTATGCTTAATAGAAAACATATTTTTATTCCGTACTTT
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CTTTGAGCCAAGAAAACAATATAACCAAAAATTCATTTGTTCCCTTTGTTTAGGG
GTGTTTTACATTTATGCATAATTTTGCTTTTATAAAAGATGATTGTTACAATCAGG

CCCCNNNNNNNNNNNNNNNNNNNNNNNNNNNNCTATFGGCTTCAAGTTGTTCACGCTT
GGTAGGTTTTGGCTTGTTCCCTCAAAGGATCCTTETTCATGTCCTCCCATGATG-
TTGCAGGCAAGGGTCTCTTGTATATGTGGTACTAACTCGGGGCCCACCTGGTCAT

>19696 BLOOD gill401816|gb|W87741.1|W87741_zh68c06.s1

35 Soares_fetal_liver_spleen_1NFLS_S1 Homo sapiens cDNA clone IMAGE:417226 3' similar
to gb:K02276 MYC PROTO-ONCOGENE PROTEIN (HUMAN);, mRNA sequence
CAATGATATATTTATTGTGTAAATCTTAAAATTTTTTAAAAACAATTCTTAAATAC
AAATCTGTAAAGAAAAAAAAAAGATGGTAAGCATAAAAAAGTTCTTTTATGCC
CAAAGTCCAATTTGAGGCAGTTTACATTATGGCTAAATCTTTCAGTCTCAAGACT
40 CAGCCAAGGTTGTGAGGTTGCATTTGATCATGCATTTGAAACAAGTTCATACGGT
GATTGCTCAGGACATTTCTGTTAGAAGGAATCGTTTTCTTACTTTTCCTTACGCA
CAAGAGTTCCGTAGCTGTTCAAGTTTCGTGTTTCAACTGTTCTCGTCGTTTCCGCA
ACAAGTCCTCTTCAGAAATGAGCTTTTGCTCCTCTGCTTGGACGGACAGGATGTA
TGCTGTGGCTTTTTTAAAGGATAACTACCTTGGGGGCCTTTTCATTGTTTCCAAC
45 CCGGGATCTGGGTCACGCAGGGCAAAAAGCTCCGTTTTAAGCTCGTTTCTCCTCCTC
TGGGCGCTCCTCGTGCC

>19853 BLOOD 1096264.4 L22009 g347313 Human hnRNP H mRNA, complete cds. 0

TTCACATGGCCGTTATAACGACGCGCGTCTGGCCGTTTCGTATTTACAACGTCGT
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TGAAATAGGATGGGTGTAAAGCATACTGGTCCAAATAGTCCTGACACGGCCAAT
GATGGCTTAGTACGGCTTAAGAGGACTACCCTATAGGATGTAGCAAGGAAGAAA
5 TTGTACAGTTCTATCTACAGGTATGTAGTCATAGTTAGTTGCTAGAGCAGTGAGT
ATAAAGGCTAGCTTATGGCAAGGTGATTTAATAGACGTTAAAGTTGAGTAGCTTA
GGTATTTTCAGTAGGTTGTAAATATGCCAATGAATTAATGTTTACTTCCTAGAGAC
CTTCAAATAATTTAAGCCCATCTTAAAGGTGGAAATGAAGTACTATCCAAAATGT
TAACTTTGCCTATATTTAGTATTATAGTTTCAGAGTAGATCTTTCATTGAGGATTGC
10 CCTCAACAGCTTAACTACTTTCCTCACATTGGTGTCCAGCTAAGTACCTCAAGTTA
AAGGTAAGATCCCTTTACCAGCAGATCATCAGTGCGATGAATTAGGTTGTTGTAA
ATTATGGCAAGTGTCTGTGTTGCAAGACACACGTATTTGGGTCATGTGACCAGAA
GCATCTAATGGTCTAATTCTCTTTAATGCAAAAGTCGGTTTATGAAAGACTTGGT
TTAACCTGTGTGGTATAACTTACTGAAAATCAGATGTAGTGAGAGTAGTTTGAAT
15 GCTTGTAGTCTCAGTATCTGAAATAAGTGTTTTGAAATTGTTCTGGGCCTAAAG
TATTTGAATGTTTTTATGCTGAAGAGCTGATAAGATTGCATGTTTAAACAATGTTA
GATAAGATATCGTATATTTGAAGTATTAATATTGATGAGGTGATACACTGGAAGC
AAGAAATCCTTTCATGGTTTAGTGTAGTATGTTAAAAATTGATATATGTATCGAG
TCCTAATGTCAGAAATTTTTAAATCAAGTCTGTTTTGTTTTGACACTAAATTGGTG
20 AGAATTGAATGCTGTCAACGTTAAATATGAACATAATTCATATCTTCTAGGAAA
GTGCTTTAAGTCCTTTTTGTAAAGCTTGGGAATGTATCCACGGAAAGGATTTTTTCAT
TAGACGGAATTTCCAGAAGTGAATCATAACTACTGTTAGAGCATAAGCATGCATG
ATTGTGCTGTGTAGATCAGTTTGGTTGAAAGTTTAGATTGTTGTTGTTGTCATTA
TAATTTAATGTTTCAGTTTTTATATGAAATGTTGTAAATGTATACCTTTTAAAAA
25 CTTGAAGTTCCAATAACTTAAAGCATTGAAATATAAAATGAGGTAAAAGGTGTT
TGAATTTAGTAAAACTGTTATTTAATGCTTAAAACTTAATTGAATTGTATAATTCT
CAACATTAAGTTGCATAGATATGTGTTCTTAAGTTGTTGAATTCTTAATGCATCCT
GTGTTTCAGCAAGTTTTTTTTAATATATACTGTACCATGGGTGTGTTAAGAATAGTT
ATACTTTATAATAATGGAACCTCATATTATTGCAATGCATATTTAAAGAGTACTT
30 GTTGAAAGCATACCATTACCTAAAGTTAAAAATTCTGGTTTATTTAAAGCTATA
AGAAGAATCATTTCTGGGCTTGTGATGTTAATATTGCCCCCTACTGGGGTTATTT
GTCCTTGGGTTGAAGGGTTGGAAATCGTGCCAAATGGGATAACATTGCCGGTGG
ACTTCCAGGGGAGGAGTACGGGGGAGGCCTTCGTGCAGTTTGCTTCACAGGAAA
TAGCTGAAAGGCTCTAAAGAAACACAAGGAAAGAATAGGGCACAGGTGGGGA
35 TGGATGGTTGGTTGGATATGTCACTTTTCTTATGGTAAACAATTAAATCCATATTC
TCTCTGCTTAAAAGAAGAAATTAATGTTTTGTAGTCCTAGGTAATTGATGTTTTGC
CATGATTTCCAAACTTGTGTCAGTCCCACGTTACACGCAAACCTAAATTTAGGTTT
GAAATTTGTCCCTAGTTAATTGGTCTGCTTGACAATTTTGTGAGTCTTATTAACCC
CAATCAATAGAGTTGAGAGACTATGGCTTTAAAAAATTAATGCAAACCTGGCTTT
40 AGCTGTAATAACACCCACCTAGAATAAATTAATATTACCATAAGAAAATGTGAT
ACTTTCTGATCTTGTTTTTAAAGTTGAAATGCAACAACTTTTTCTTGCTGTATAT
AAATATTCTGCATAGTATTAATAAGCATAGCTTTCAAGAAATTGTCACAAAAGGT
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TCTTACTAAAAGCATAGGCTGGGGTATTTATTGGCGAAAGGAAATGTGTAGTGTG
45 GGCTGGACTGTTGGTGGAGGCTGGCTTTTTAGCCCACTTGCTATACATGCTGCCA
ATGGATTTAAGACTTGAAATGTTGAAAGTTGAGTGGAATTATTTCCCTCCTAAAA
CATTTATTTACAGTACTCCTCTCTACCCCTAAGGTTGGGCTCTGCCTCAGAGGAGT
GAGTTTTTTTTTTTTTCTATAAAGTTTACATTGTCTTACTATTTATTGAGTGAATT
TCGGTCATTGCCTATGCAAATATAAGAAATCTGGCTTTAAATATTAGTCAGTTTC

ATGGCTATGACTAGATTGTTTTCTTGTATAACTAAATACCTGTATAAAATGAACT
AATGTTTTCTCTCCCCTCCCTACCCCTTCCTTATGAACAATGCTTTAGGTATATTG
AAATCTTTAAGAGCAGTAGAGCTGAAGTTAGAAGCTCATTATGATCCACCACGAA
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5 GGTATAACAGCATTGGCAGAGGAGCTGGCTTTGAGAGGATGAGGCGTGGTGCTT
ATGGTGGAGGCTATGGAGGCTATGATGATTACAATGGCTATAATGATGGCTATG
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TGATCACAGATACGGGGATGGTGGCTCTACTTTCCAGAGCACAAACAGGACACTG
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10 TTTTCACCGCTCAACCCTGTGAGAGTACACATTGAAATTGGTCCTGATGGCAGAG
TAACTGGTGAAGCAGATGTCGAGTTCGCAACTCATGAAGATGCTGTGGCAGCTAT
GTCAAAGACAAAGCAAATATGCAACACAGATATGTAGAAGCTCTTCTTGAATTCT
ACAGCAGGAGCAAGCGGTGGTGCTTACGAACACAGATATGTAGAAGCTCTTCTTG
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15 ATGGGCTTGTCAAACCAGTCCAGCTACGGGGGCCAGCCAGCCAGCAGCTGAGT
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AGCAGTGAACAGCAGCTACTACAGTAGTGGAAGCCGTGCATCTATGGGCGTGAA
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20 ATTGATCGATCCTGATCACTGACTCTTGGTCAACCTTTTTTTTTTTTTTTTTTTC
TTTAAGAAACTTCAGTTTAAACAGTTTCTGCAATACAAGCTTGTGATTTATGCTTA
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CAATACTCATCEAGGATGTAAACAGTGAAAGCTGAGTAACTATAACTGTTAAACTT
AAGTCCAGCTTTTCTCAAGTTAGTTATAGGATGTACTTAAGCAGTAAGCGTATT
25 TAGGTAAAAGCAGTTGAATTATGTTAAATGTTGCCCTTTGCCACGGTAAANTGGA
CCACTGTTTTGGGATGCATGTTGAAAGACATGCTTTTATTTTTTTGTAAAACAATA
TAGGAGCTGTGTCTACTATTAAAAGTGAAACATTTTGGGCATGTTTGTTTAAATT
CTTAGTTTTCATTTTAAATAAACCCCTGTTAAGGGCAACGGTAAAGTTTTAAAGCC
TTTTNTNTNTNTNTNTNTTTTAAAGTTTAAATGGGGGGAAAAAAAATTTT

30

SEQ ID NO: 582

>19871 BLOOD GB_X00187 X00187 Preproenkephalin (leu-enkephalin, met-enkephalin)

CAGCCGTTAAGCCCCGGGACGGCGAGGCAGGCGCTCAGAGCCCCGCAGCCTGGC
CCGTGACCCCGCAGAGACGCTGAGGACC

35

SEQ ID NO: 583

>19872 BLOOD 1102297.22 X63432 g28335 Human ACTB mRNA for mutant beta-actin (beta'-actin). 0

TTTGGCTTTATTCATTTTTTGTGAGAGTTGACCATCAGGTATATTGGGGAAGGGA
40 GAGATGGAGGCACCTTCATGAGTGCCCTCCAAGGGCAGTAGCCTCTGCAACTTGC
TGGGGGTTTCAGGGGAAGCAGGGAGTTTCATGGGGCTCCTCCAGCAAAGATGAGCT
CCAGGGCTGCTTGGATGTCCCCACCGGTGGCCTGCAGGGCCCGCAGGCTCAGCTC
ATCGTCCTGGATGCCCATGTACGTAGCTGCTGCAGCTGGGGCTGCCACTGGCTC
TGAAGGCTGGGCTGCCCAGAGGCCTGAAGGGCATGCTGTAGGGCTTGGCTGAAG
45 AGATCATTGGTGATGGGCGTCCCTGACTGGACACCAGAGGACATTGGTGAGGTC
CCTGAGGAATGACCCTGGGTGCCAGGAGTCGGTGTGTGAGAGCTGCTCTCCGGA
GTGCTGGCCAGGGCCAAGGCGGTGGCCAGCTCACTCTGGGTGATGGGCCGGGGC
CCAGCAGCTCCACTGTACCCAGGGAGGCTGGGCGGGAGCTGGGAGTACTGCTA
GAGGGTGTGGACCTGGTGTTTGGGTGAAAGTCATCCTCATCATCTGAGAGCCCTT

CAAACAGGAAGCCACCTGGCATATCCCGGTATGAGCTGGAGGGCATGCTCCGGG
AAGAGGAGTCAGTCCCAGGCATTGGGGCACTGCCTGCTACGGAGTGCAGAACCA
GGACAATGGCATTGACGAGGGCTGGGTGAGCAGGCACCAACGTATCAAGCATAT
TGGGATCAGCGAAGACAGAGAAGAGGTCTTGTCTGGAGAACCCCAAGAGCAA
5 TAGGGTCACTGCTGAGGCCTGGGGTGGCCACAATGATCTGATCCAGAGACTCCTT
ATTGCTGAGCATCTTAAAGACCGCCTCCCTGTAAGAGGAGCTGCTGTGCAGGGCA
GTGTGCAACACCCGGAACCTCTCTCATGGCAGCCACTTTGTCCACAGGTTCCGGTT
TCTGATCAGGTTCAAGGCCAGGACTTTTCGAGAACATGGACAGTGGACCCAGGTT
GAATGCCATAGAAGTCAAGTGTCTGGTCATCTTTTAGCTTCCGACCACAGTAGAT
10 CAGATCAATCAGCTCAGGGTCTGGAACAGACTCCTGGAGTTTGCCAGCAATAAG
CTGCTTCAGAAATGAAATACTATAGCCCCCTAGCGAGTATTCTCCAGTTCTGTC
TCTGGCAACCGAAGAATAGACTTTGGAGTAAGTGGCTGGTCAGCCAGCTTCACC
GCCAGGTGCCAGTCTGAGAGAGACATCCTCTCTTTTCGCGCTCTCTCTTTCTCCC
CGTCCCGCCGAGACCGCGTCCGCCCGCGAGCACAGAGCCTCGCCTTTGCCGATC
15 CGCCGCCCGTCCACACCCGCCGCCAGCTCACCATGGATGATGATATCGCCGCGCT
CGTCGTCGACAACGGCTCCGGCATGTGCAAGGCCGGCTTCGCGGGCGACGATGC
CCCCCGGGCCGTCTTCCCCTCCATCGTGGGGCGCCCCAGGCACCAGGGCGTGATG
GTGGGCATGGGTGAGAAGGATTCTATGTGGGCGACGAGGCCAGAGCAAGAGA
GGCATCCTCACCTGAAGTACCCCATCGAGCACGGCATCGTCACCAACTGGGAC
20 GACATGGAGAAAATCTGGCACCACACCTTCTACAATGAGCTGCGTGTGGCTCCCG
AGGAGCACCCCGTGCTGCTGACCGAGGCCCCCTGAACCCCAAGGCCAACCGCG
AGAAGATGACCCAGATCATGTTTGAGAGCTTGAACAGCCCAGCCATGTACGTGCG
TATCCAGGCTGTGCTATCCCTGTACGGCTCTGGCCGTACCACTGGCATCGTGATG
GACTCCGGTGACGGGGTCAACCACTGTGCCCATCTACGAGGGGTATGCCCTCC
25 CCCATGCCATCCTGCGTCTGGACCTGGCTGGCCGGGACCTGACTGACTAECTCAT
GAAGATCCTCACCGAGCGCGGCTACAGCTTCAACCACCACGGCCGAGCGGGAAAT
CGTGCGTGACATTAAGGAGAAGCTGTGCTACGTGCGCCTGGACTTCGAGCAAGA
GATGGCCACGGCTGCTTCCAGCTCCTCCCTGGAGAAGAGCTACGAGCTGCCTGAC
GGCCAGGTCATCACCATTGGCAATGAGCGGTTCCGCTGCCCTGAGGCACTCTTCC
30 AGCCTTCTTCTGGGCATGGAGTCTGTGGCATCCACGAACTACCTTCAACTC
CATCATGAAGTGTGACGTGGACATCCGCAAGACCTGTACGCCAACACAGTGCT
GTCTGGCGGCACCACCATGTACCCTGGCATTGCCGACAGGATGCAGAAGGAGAT
CACTGCCGTGGCACCCAGCACAAATGAAGATCAAGATCATTGCTCCTCCTGAGCGC
AAGTACTCCGTGTGGATCGGCGGCTCCATCCTGGCCTCGCTGTCCACCTTCCAGC
35 AGATGTGGATCAGCAAGCAGGAGTATGACGAGTCCGGCCCCCTCCATCGTCCACC
GCAATGCTTCTAGGCGGACTATGACTTAGTTGCGTTACACCCTTTCTTGACAAA
ACCTAACTTGCGCAGAAAACAAGATGAGATTGGCATGGCTTTATTTGTTTTTTT
GTTTTGTTTTGGTTTTCTTTTTTTTTTGGCTTGACTCAGGATTTAAAACTGGAAC
GGTGAAGGTGACAGCAGTCGGTTGGAGCGAGCATCCCCAAAGTTCACAATGTG
40 GCCGAGGACTTTGATTGCACATTGTTGTTTTTTAATAGTCATTCCAAATATGAGA
TGCATTGTTACAGGAAGTCCCTTGCCATCCTAAAAGCCACCCCACTTCTCTCTAA
GGAGAATGGCCAGTCCTCTCCCAAGTCCACACAGGGGAGGTGATAGCATTGCT
TTCGTGTAAATTATGTAATGCAAAATTTTTTTAATCTTCGCCTTAATACTTTTTTAT
TTTGTTTTATTTGAATGATGAGCCTTCGTGCCCCCCTTCCCCCTTTTTTGTCCCC
45 CAACTTGAGATGTATGAAGGCTTTTGGTCTCCCTGGGAGTGGGTGGAGGCAGCCA
GGGCTTACCTGTACACTGACTTGAGACCAGTTGAATAAAAGTGCACACCTTAAAA
ATGAAAAAA

SEQ ID NO: 584

>19885 BLOOD 236030.3 M17752 g33917 Human mRNA for gamma-interferon inducible early response gene (with homology to platelet proteins). 0

5 GGAACAGCCAGCAGGTTTTGCTAAGTCAACTGTAATGCCCTTATCCAATCAGAAT
TAGGGAGGGAAAATGGCTTTGCAGATAAATATGGNACACTAGCCCCACGNTTTC
TGAGACATTCTCAATTGCTTAGACATATTCTGAGCCTACAGCAGAGGAACCTCC
AGTCTCAGCACCATGAATCAAACCTGCCATTCTGATTTGCTGCCTTATCTTTCTGAC
TCTAAGTGGCATTCAAGGAGTACCTCTCTCTAGAACTGTACGCTGTACCTGCATC
AGCATTAGTAATCAACCTGTTAATCCAAGGTCTTTAGAAAACTTGAAATTATTC
10 CTGCAAGCCAATTTTGTCCACGTGTTGAGATCATTGCTACAATGAAAAAGAAGGG
TGAGAAGAGATGTCTGAATCCAGAATCGAAGGCCATCAAGAATTTACTGAAAGC
AGTTAGCAAGGAAAGGTCTAAAAGATCTCCTTAAAACCAGAGGGGAGCAAAATC
GATGCAGTGCTTCCAAGGATGGACCACACAGAGGCTGCCTCTCCCATCACTTCCC
TACATGGAGTATATGTCAAGCCATAATTGTTCTTAGTTTGCAGTTACACTAAAAG
15 GTGACCAATGATGGTCACCAAATCAGCTGCTACTACTCCTGTAGGAAGGTAAATG
TTCATCATCCTAAGCTATTCAGTAATAACTCTACCCTGGCACTATAATGTAAGCTC
TACTGAGGTGCTATGTTCTTAGTGGATGTTCTGACCCTGCTTCAAATATTTCCCTC
ACCTTTCCCATCTTCCAAGGGTACTAAGGAATCTTTCTGCTTTGGGGTTTATCAGA
ATTCTCAGAATCTCAAATAACTAAAAGGTATGCAATCAAATCTGCTTTTAAAGA
20 ATGCTCTTTACTTCATGGACTTCCACTGCCATCCTCCCAAGGGGCCCAAATCTTT
CAGTGGCTACCTACATACAATTCCAAACACATACAGGAAGGTAGAAATATCTGA
AAATGTATGTGTAAGTATCTTATTTAATGAAAGACTGTACAAAGTAGAAGTCTT
AGATGTATATATTTCCCTATATTGTTTTCAGTGTACATGGAATAACATGTAATTAAG
TACTATGTATCAATGAGTAACAGGAAAAATTTTAAAAATACAGATAGATATATGCT
25 CTGCATGTTACATAAGATAAATGTGCTGAATGGTTTTCAAATAAAAAATGAGGTA
CTCTCCTGGAAATATTAAGAAAGACTATCTAAATGTTGAAAGACCAAAAAGGTTA
ATAAAGTAATTATAACT

SEQ ID NO: 585

30 >19887 BLOOD 272980.8 X02544 g24444 Human mRNA for alpha1-acid glycoprotein (orosomucoid). 0

GCAGGATTGTGTACAGACACAGAGTAAACTTTTGCTGGGCTCCAAGTGACCGCC
CATAGTTTATTATAAAGGTGACTGCACCCTGCAGCCACCAGCACTGCCTGGCTCC
ACGTGCCTCCTGGTCTCAGTATGGCGCTGTCCTGGGTTCTTACAGTCCTGAGCCTC
35 CTACCTCTGGCTGGAAGCCCAGATCCCATTTGTGTGCCAACCTAGTACCGGTGCCC
ATCACCAACGCCACCCTGGACCGGATCACTGGCAAGTGGTTTTATATCGCATCGG
CCTTTCGAAACGAGGAGTACAATAAGTCGGTTCAGGAGATCCAAGCAACCTTCTT
TTACTTCACCCCCAACAAGACAGAGGACACGATCTTTCTCAGAGAGTACCAGACC
CGACAGGACCAGTGCATCTATAACACCACCTACCTGAATGTCCAGCGGGAAAAT
40 GGGACCATCTCCAGATACGTGGGAGGCGGAGAGCATTTCGCTCACTTGCTGATCC
TCAGGGACACCAAGACCTACATGCTTGCTTTTGACGTGAACGATGAGAAGAACT
GGGGGCTGTCTGTCTATGCTGACAAGCCAGAGACGACCAAGGAGCAACTGGGAG
AGTTCTACGAAGCTCTCGACTGCTTGCGCATTCCCAAGTCAGATGTCGTGTACAC
CGATTGGAAAAAGGATAAGTGTGAGCCACTGGAGAAGCAGCACGAGAAGGAGA
45 GGAAACAGGAGGAGGGGGAATCCTAGCAGGACACAGCCTTGGATCAGGACAGA
GACTTGGGGGCCATCCTGCCCTCCAACCCGACATGTGTACCTCAGCTTTTTCCCT
CACTTGCATCAATAAAGCTTCTGTGTTTGAACAGCTAAAAAAA

SEQ ID NO: 586

>19916 BLOOD 234842.5 M16447 g181552 Human dihydropteridine reductase (hDHPR)

mRNA, complete cds. 0

CTGGCAGGAGCAGGATGGCGGCGGCGGCGGCTGCAGGCGAGGCGCGCCGGGTG
5 CTGGTGTACGGCGGCAGGGGCGCTCTGGGTTCTCGATGCGTGCAGGCTTTTCGGG
CCCGCAACTGGTGGGTTGCCAGCGTTGATGTGGTGGAGAATGAAGAGGCCAGCG
CTAGCATCATTGTTAAAATGACAGACTCGTTCACTGAGCAGGCTGACCAGGTGAC
TGCTGAGGTTGAAAAGCTCTTGGGTGAAGAGAAGGTGGATGCAATTCTTTGCGTT
GCTGGAGGATGGGCGGGGGCAATGCCAAATCCAAGTCTCTCTTTAAGAACTGT
10 GACCTGATGTGGAAGCAGAGCATATGGACATCGACCATCTCCAGCCATCTGGCT
ACCAAGCATCTCAAGGAAGGAGGCCTCCTAACCTTGGCTGGCGCAAAGGCTGCC
CTGGATGGGACTCCTGGTATGATCGGGTACGGCATGGCCAAGGGTGCTGTTACCC
AGCTCTGCCAGAGCCTGGCTGGGAAGAACAGCGGCATGCCGCCCCGGGGCAGCCG
CCATCGCTGTGCTCCCGGTTACCCTGGATACCCCGATGAACAGGAAATCAATGCC
15 TGAGGCTGACTTCAGCTCCTGGACACCCTTAGAATTCCTAGTTGAAACTTTCCAT
GACTGGATCACAGGGAAAAACCGACCGAGCTCAGGAAGCCTAATCCAGGTGGTA
ACCACAGAAGGAAGGACGGAACCTACCCCGAGCATATTTTATAGGCCTCATCTCAGT
GCCTATGAGGGGCGCTGCCAGAAAAGTCACTAACCTGTCTCAGTGTGGCCTTGTC
AGCCTTGTGTTTTCTGTAACCCCTGTTTGTGGTACGAGATAATGAGTCCTATTTTT
20 CTCTCACATAATATGCATTTGCTCTCCTAGGACAGTGTAATACATTTATGTGAAGT
AAAGACATGCGAGACTGGTGGCCTGCAAAATAGCATCCGTCAATCTGTGTTAACTG
GATAGGGAGGGCTCTGCATAGCACCTGCTATAGCGGTGTCATGTTGGATCGCTTT
TGTAAGTGTTCATCTGTCCTTGACAGTGGCTGTCATCTTGACTACTTGGTTGATTT
GTGGGATTGGGGACATTTTAAAGGCTGAGTTATTTTTGAATGTCATGTTTATGTC
25 ATAGACGTAGTTTTTCGCATCCTTGAATTAAACTGCCTTAACTCCTTTTGTGGTATA
AGCAAAACTACATGGACTCTGTCCTGGTATCCTTTTCCTGTGTGGTTGCCCTGTGT
CCTCTGGCCTAGGGTTAAGTGTGCAAGATAACTACTCGTGAGTATTCAGAATGTT
GTTCTTAATAAATGCACCTGTTGTCTGTCTTCTTTAATCAAATCACATCTTATATA
CAGCAGTCAGAGATGAGTATACTAGAATCATGGATTGCTGGAGGTCTTTTAATCT
30 GGTGTTCTCGGAAGGGGGTGCATTTAAATCCTGAAATAAATATTTCAACACAAGA
ACACAGGCCTGATTCTGCCTTGGACATGTCCAAATCTGGGGGTGATGGGATGGCC
CTGTGCATTTAGAAGCAGCTCTCCACATATGGCCAATGTAGGCTGTCCTGGTTCGA
AACTAGTAGTGGTTTAATTCAAGGATGCGGAAAACTACGTCTTATGACATAAAC
ATGACATTCAAAAATAACTCAGCCTTAACTGGCAGAGCTAAGCCCAGATCTCTA
35 GTCACCAGACTCTTGCTGTTTTTAAAGGCCTTACCACGTATTTTCTTTCTTTTTT
AGTGAGGTGAAATTCACATAA

SEQ ID NO: 587

>19943 BLOOD 425535.24 D14533 g286028 Human mRNA for XPAC protein. 0

TTTCCATTTTAATCCAGCATTTAAAAAGCTATCTAGACTAATGTAAAGTCCCACA
40 ATAGAGGCCCCAAGAGTACAGAAAACATGATCAGACTCGTACAACTCAATGTTT
ATTTCTGCTATTAGGGCTTTTTCCAGCAGTAGTTCCCCACTGTTTCCACCATCGTG
GAGACAGAAATCGTCCTAAAAAACACATGACTAGAACCTGGGGTACAGTGGTGC
ACCACCATTGCTATTATTTGTTTCTTGGTTAAGAATCCAGTTCAGCCTTTGTTGAA
45 CCCTTTTCCCTCTACCCCAATCTAGGGTTTGCCTTGGTATCTTGTCTCAAATTTGT
AGCTGACCTACCACTTCTGCACCTACTCTAGCACTCAGCTCCCATCTCTGTTGTAA
GAAGGCAATCACAGACATGACATTGTGCACACAACCAGGCCAGGTGACCTTCAC
TGAAACTTGCTTTTAAAGCCATAACATAACATAATTATTACTGAAGTATTACTTATAC
AAGGGTTTCATTCATCTATGAAGATGTTGCTTTTTTTTTTTGAATTTTGAAAAGGAC

499

GCGGCATGGGGTCCGGGGGCCTGGCCACCGGGATAGCCGGGGGTCTGGCAGGAA
 TGGGAGGCATCCAGAACGAGAAGGAGACCATGCAAAGCCTGAACGACCGCCTG
 GCCTCTTACCTGGACAGAGTGAGGAGCCTGGAGACCGAGAACCGGAGGCTGGAG
 AGCAAAATCCGGGAGCACTTGGAGAAGAAGGGACCCAGGTCAGAGACTGGAG
 5 CCATTACTTCAAGATCATCGAGGACCTGAGGGCTCAGATCTTCGCAAATACTGTG
 GACAATGCCCCGCATCGTTCTGCAGATTGACAATGCCCCGTCTTGCTGCTGATGACT
 TTAGAGTCAAGTATGAGACAGAGCTGGCCATGCGCCAGTCTGTGGAGAACGACA
 TCCATGGGCTCCGCAAGGTCATTGATGACACCAATATCACACGACTGCAGCTGGA
 GACAGAGATCGAGGCTCTCAAGGAGGAGCTGCTCTTCATGAAGAAGAACCACGA
 10 AGAGGAAGTAAAAGGCCTACAAGCCCAGATTGCCAGCTCTGGGTTGACCGTGGA
 GGATAGATGCCCCCAAATCTCAGGACCTCGCCAAGATCATGGCAGACATCCGGGC
 CCAATATGACGAGCTGGCTCGGAAGAACCGAGAGGAGCTAGACAAGTACTGGTC
 TCAGCAGATTGAGGAGAGCACCACAGTGGTCACCACACAGTCTGCTGAGGTTGG
 AGCTGCTGAGACGACGCTCACAGAGCTGAGACGTACAGTCCAGTCCCTTGAGAT
 15 CGACCTGGACTCCATGAGAAATCTGAAGGCCAGCTTGAGAGAACAGCCTGAGGGA
 GGTGGAGGGCCCGCTACGCCCTACAGATGGAGCAGCTCAACGGGATCCTGCTGCA
 CCTTGAGTCAGAGCTGGCACAGACCCGGGCAGAGGGACAGCGCCAGGCCAGGA
 GTATGAGGCCCTGCTGAACATCAAGGTCAAGCTGGAGGCTGAGATCGCCACCTA
 CCGCCGCCTGCTGGAAGATGGCGAGGACTTTAATCTTGGTGATGCCTTGACAGC
 20 AGCAACTCCATGCAAACCATCCAAAAGACCACCACCCGCGGATAGTGGATGGC
 AAAGTGGTGTCTGAGACCAATGACACCAAAGTTCTGAGGCATTAAGCCAGCAGA
 AAGCAGGGTACCATGATAATTTTGTCTTCTTGGACTGAAACATAGTCTGGGTCTCT
 AACGTTGGCCGGTGATGATGGTTGAACATCATGTTTTTATAAACCTTAATTTCTCA
 TTTAATAGGAAGAAAATCTCAGGAGAGCCAAAAGGGAGGACCTGAAGGTGAGC
 25 ATCCACCAAATGGAGATGGAGAGGATCCGCTACGTCCTCAGCAGCTACTTGCGG
 TGTCGCCTCATGAAGGTTTGACGTGGAGATACCTCAAAGTCTCCGACCTCCGGGG
 AGCCGAGAGCGGGACGTGGGAGCCGGGCTTG

SEQ ID NO: 588

30 >19975 BLOOD gi|28229|emb|X15357.1|HSAANP Human mRNA for natriuretic peptide receptor (ANP-A receptor)

CCATGGTAGGAGCGCTCGCCTCGCTGCGGTGCCCGCTGAGGCCATGCCGGGGGCC
 CCGGCGCCCCGCTGGCTCCCGCCTGCGCCTGCTCCTGCTCCTGCTGCTGCCGGCCG
 CTGCTGCTGCTGCTCCGGGGCAGCCACGCGGGCAACCTGACGGTAGCCGTGGTA
 35 CTGCCGCTGGCCAATACCTCGTACCCCTGGTCGTGGGCGCGCGTGGGACCCGCCG
 TGGAGCTGGCCCTGGCCCAGGTGAAGGCGCGCCCCGACTTGCTGCCGGGCTGGA
 CGGTCCGCACGGTGCTGGGCAGCAGCGAAACGCGCTGGGCGTCTGCTCCGACA
 CCGCAGCGCCCCTGGCCGCGGTGGACCTCAAGTGGGAGCACAACCCCGCTGTGT
 TCCTGGGGCCCCGGCTGCGTGTACGCCGCCGCCCCAGTGGGGCGCTTCACCGCGCA
 40 CTGGCGGGTCCCCTGCTGACCGCCGGCGCCCCGGCGCTGGGCTTCGGTGTCAAG
 GACGAGTATGCGCTGACCAACCCGCGCGGGGGCCAGCTACGCCAAGCTGGGGGAC
 TTCGTGGCGGCGCTGCACCGACGGCTGGGCTGGGAGCGCCAAGCGCTCATGCTCT
 ACGCCTACCGGCCGGGTGACGAAGAGCACTGCTTCTTCCTCGTGGAGGGGCTGTT
 CATGCGGGTCCGCGACCGCCTCAATATTACGGTGGACCACTGGAGTTCGCCGAG
 45 GACGACCTCAGCCACTACACCAGGCTGCTGCGGACCATGCCGCGCAAAGGCCGA
 GTTATCTACATCTGCAGCTCCCCTGATGCCTTCAGAACCCTCATGCTCCTGGCCCT
 GGAAGCTGGCTTGTGTGGGGAGGACTACGTTTTCTTCCACCTGGATATCTTTGGG
 CAAAGCCTGCAAGGTGGACAGGGCCCTGCTCCCCGACGGCCCTGGGAGAGAGGG
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AGCATCCTTCCACGACGGGCTCCTGCTCTATATCCAGGCAGTGACGGAGACTCTG
GCACATGGGGGAACTGTTACTGATGGGGAGAACATCACTCAGCGGATGTGGAAC
5 CGAAGCTTTCAAGGTGTGACAGGATACTGAAAATTGATAGCAGTGGCGATCGG
GAAACAGACTTCTCCCTCTGGGATATGGATCCCGAGAATGGTGCCTTCAGGGTTG
TACTGAACTACAATGGGACTTCCCAAGAGCTGGTGGCTGTGTGCGGGGCGCAAAC
TGAAGTGGCCCCTGGGGTACCCTCCTCCTGACATCCCCAAATGTGGCTTTGACAA
CGAAGACCCAGCATGCAACCAAGATCACCTTTCCACCCTGGAGGTGCTGGCTTTG
10 GTGGGCAGCCTCTCCTTGCTCGGCATTCTGATTGTCTCCTTCTTCATATACAGGAA
GATGCAGCTGGAGAAGGAACTGGCCTCGGAGCTGTGGCGGGTGCGCTGGGAGGA
CGTTGAGCCCAGTAGCCTTGAGAGGCACCTGCGGAGTGCAGGCAGCCGGCTGAC
CCTGAGCGGGAGAGGCTCCAATTACGGCTCCCTGCTAACCACAGAGGGCCAGTT
CCAAGTCTTTGCCAAGACAGCATATTATAAGGGCAACCTCGTGGCTGTGAAACGT
15 GTGAACCGTAAACGCATTGAGCTGACACGAAAAGTCCTGTTTGAAGCAT
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CCCCCAATATCTGCATCCTCACAGAGTACTGTCCCCGTGGGAGCCTGCAGGACA
TTCTGGAGAATGAGAGCATCACCTGGACTGGATGTTCCGGTACTCACTACCAA
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20 AACCTCAAGTCATCCAACTGCGTGGTAGATGGGCGCTTTGTGCTCAAGATCACCG
ACTATGGGCTGGAGAGCTTCAGGGACCTGGACCCAGAGCAAGGACACACCGTTT
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GGCCTGAGGAGTGGGGTCTTCCAGGTGGAAGGTTTGGACCTGAGCCCCAAAGAG
25 ATCATCGAGCGGGTGAATCGGGGTGAGCAGCCCCCTTCCGGCCCTCCCTGGCCC
TGCAGAGTCACCTGGAGGAGTTGGGGCTGCTCATGCAGCGGTGCTGGGCTGAGG
ACCCACAGGAGAGGCCACCATTCCAGCAGATCCGCCTGACGTTGCGCAAATTTA
ACAGGGAGAACAGCAGCAACATCCTGGACAACCTGCTGTCCCGCATGGAGCAGT
ACGCGAACAATCTGGAGGAACTGGTGGAGGAGCGGACCCAGGCATACCTGGAG
30 GAGAAGCGCAAGGCTGAGGCCCTGCTCTACCAGATCCTGCCTCACTCAGTGGCTG
AGCAGCTGAAGCGTGGGGAGACGGTGCAGGCCGAAGCCTTTGACAGTGTTACCA
TCTACTTCAGTGACATTGTGGGTTTACAGCGCTGTCGGCGGAGAGCACACCCAT
GCAGGTGGTGACCCTGCTCAATGACCTGTACACTTGCTTTGATGCTGTATAGAC
AACTTTGATGTGTACAAGGTGGAGACAATTGGCGATGCCTACATGGTGGTGTGAG
35 GGCTCCCTGTGCGGAACGGGCGGCTACACGCCTGCGAGGTAGCCCCGATGGCCC
TGGCACTGCTGGATGCTGTGCGCTCCTTCCGAATCCGCCACCGGCCCCAGGAGCA
GCTGCGCTTGCGCATTGGCATCCACACAGGACCTGTGTGTGCTGGAGTGGTGGGA
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40 CCTGGAGGAGTTTGGTGGTTTCGAGCTGGAGCTTCGAGGGGATGTAGAAATGAA
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CCGAGGCTGACCTGCCTCCTCTCCTATCCCTCCACACCTCCCTACCCTGTGCCAG
AAGCAACAGAGGTGCCAGGCCTCAGCCTCACCCACAGCAGCCCCATCGCCAAAG
GATGGAAGTAATTTGAATAGCTCAGGTGTGCTGACCCAGTGAAGACACCAGAT
45 AGGACCTCTGAGAGGGGACTGGCATGGGGGGATCTCAGAGCTTACAGGCTGAGC
CAAGCCCACGGCCATGCACAGGGACACTCACACAGGCACACGCACCTGCTCTCC
ACCTGGACTCAGGCCGGGCTGGGCTGTGGATCCTTGATCCCTCCCTCCCATG
CTCTCCTCCCTCAGCCTTGCTACCCTGTGACTTACTGGGAGGAGAGTCACCTGAA
GGGGAACATGAAAAGAGACTAGGTGAAGAGAGGGCAGGGGAGCCCACATCTGG

GGCTGGCCCCACAATACCTGCTCCCCCGACCCCCTCCACCCAGCAGTAGACACAGT
GCACAGGGGGAGAAGAGGGGTGGCGCAGAAGGGTTGGGGGCCTGTATGCCTTGCT
TCTACCATGAGCAGAGACAATTAATAATCTTTATTCCAGTG

5 SEQ ID NO: 589

>20014 BLOOD Hs.347 gnl|UG|Hs#S3990 Human mRNA for lactoferrin /cds=(294,2429)

/gb=X53961 /gi=34415 /ug=Hs.347 /len=2619

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GCAGAACCAGGACAGGTGAGGTGCAGGCTGGCTTTCCTCTCGCAGCGCGGTGTG

10 GAGTCCTGTCCTGCCTCAGGGCTTTTCGGAGCCTGGATCCTCAAGGAACAAGTAG
ACCTGGCCGCGGGGAGTGGGGAGGGAAGGGGTGTCTATTGGGCAACAGGGCGG

CAAAGCCCTGAATAAAGGGGCGCAGGGCAGGCGCAAGTGCAGAGCCTTCGTTTG
CCAAGTCGCCTCCAGACCGCAGACATGAAACTTGTCTTCCTCGTCCTGCTGTTCT

15 CGGGGCCCTCGGACTGTGTCTGGCTGGCCGTAGGAGAAGGAGTGTTCAAGTGGTG
CGCCGTATCCCAACCCGAGGCCACAAAATGCTTCCAATGGCAAAGGAATATGAG

AAAAGTGCGTGGCCCTCCTGTCAGCTGCATAAAGAGAGACTCCCCCATCCAGTGT
ATCCAGGCCATTGCGGAAAACAGGGCCGATGCTGTGACCCTTGATGGTGGTTTCA

TATACGAGGCAGGCTGGCCCCCTACAACTGCGACCTGTAGCGGCGGAAGTCT
ACGGGACCGAAAGACAGCCACGAACTCACTATTATGCCGTGGCTGTGGTGAAGA

20 AGGGCGGCAGCTTTCAGCTGAACGAACTGCAAGGTCTGAAAGTCTGCCACACAG
GCCTTCGCAGGACCGCTGGATGGAATGTCCCTACAGGGACACTTCGTCCATTCTT

GAATGGACGGGTCCAGCTGAGGCACTTGAAGGACAGCTGTGGECAGGTTCTTCTCA
GCGAGCTGTGTTCCGCGGTGCAGATAAAGGACAGTTCCCCAACCTGTGTGCGCTGT

GTGCGGGGACAGGGGAAAACAAATGTGCCTTCTCTCCAGGAACCGTACTTCA
GCTACTCTGGTGCCTTCAAGTGTCTGAGAGACGGGGCTGGAGACGTGGCTTTTAT

25 CAGAGAGAGCACAGTGTGTTGAGGACCTGTCAGACGAGGCTGAAAGGGACGAGTA
TGAGTTACTCTGCCAGACAACACTCGGAAGCCAGTGGACAAGTTCAAAGACTG

CCATCTGGCCCGGGTCCCTTCTCATGCCGTGTGGCACGAAGTGTGAATGGCAAG
GAGGATGCCATCTGGAATCTTCTCCGCCAGGCACAGGAAAAGTTTGGAAAGGAC

30 AAGTCACCGAAATTCCAGCTCTTTGGCTCCCCTAGTGGGCAGAAAGATCTGCTGT
TCAAGGACTCTGCCATTGGGTTTTTCGAGGGTGGCCCCGAGGATAGATTCTGGGCT

GTACCTTGGCTCCGGCTACTTCACTGCCATCCAGAACTTGAGGAAAAGTGAGGAG
GAAGTGGCTGCCCGGCGTGCAGCGGGTCTGTGTGGTGTGCGGTGGGCGAGCAGGAG

CTGCGCAAGTGTAACCAAGTGGAGTGGCTTGAGCGAAGGCAGCGTGACCTGCTCC
35 TCGGCCTCCACCACAGAGGACTGCATCGCCCTGGTGCTGAAAGGAGAAGCTGAT

GCCATGAGTTTGGATGGAGGATATGTGTACACTGCATGCAATGTGGTTTGGTGC
CTGTCTGGCAGAGAACTACAAATCCCAACAAAGCAGTGACCCTGATCCTAACT

GTGTGGATAGACCTGTGGAAGGATATCTTGCTGTGGCGGTGGTTAGGAGATCAG
ACACTAGCCTTACCTGGAACCTGTGTGAAAGGCAAGAAGTCCTGCCACACCGCCGT

40 GGACAGGACTGCAGGCTGGAATATCCCCATGGGCCTGCTCTTCAACCAGACGGG
CTCCTGCAAATTTGATGAATATTTCAAGTCAAAGCTGTGCCCTGGGTCTGACCCG

AGATCTAATCTCTGTGCTCTGTGTATTGGCGACGAGCAGGGTGAGAATAAGTGCG
TGCCCAACAGCAACGAGAGATACTACGGCTACACTGGGGCTTTCCGGTGCCTGG

CTGAGAATGCTGGAGACGTTGCATTTGTGAAAGATGTCACTGTCTTGCAGAACAC
45 TGATGGAAATAACAATGAGGCATGGGCTAAGGATTTGAAGCTGGCAGACTTTGC

GCTGCTGTGCCTCGATGGCAAACGGAAGCCTGTGACTGAGGCTAGAAGCTGCCA
TCTTGCCATGGCCCCGAATCATGCCGTGGTGTCTCGGATGGATAAGGTGGAACGC

CTGAAACAGGTGCTGCTCCACCAACAGGCTAAATTTGGGAGAAATGGATCTGAC
TGCCCGGACAAGTTTTGCTTATTCCAGTCTGAAACCAAAAACCTTCTGTTCAATG

ACAACACTGAGTGTCTGGCCAGACTCCATGGCAAAACAACATATGAAAAATATT
 TGGGACCACAGTATGTCGCAGGCATTACTAATCTGAAAAAGTGCTCAACCTCCCC
 CCTCCTGGAAGCCTGTGAATTCTCAGGAAGTAAAACCGAAGAAGATGGCCCAG
 CTCCCCAAGAAAGCCTCAGCCATTCACTGCCCCCAGCTCTTCTCCCCAGGTGTGT
 5 TGGGGCCTTGGCTCCCCTGCTGAAGGTGGGGATTGCCCATCCATCTGCTTACAAT
 TCCCTGCTGTCGTCTTAGCAAGAAGTAAAATGAGAAATTTTGTGATATTCAAAA
 AAAA

SEQ ID NO: 590

10 >20031 BLOOD gi|35521|emb|X54936.1|HSPLGF H.sapiens mRNA for placenta growth
 factor (PIGF)
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 GGACCATCCCCGGGACCCGCTGCCCCCTCGGCGCCCCGCCCGGGGCCGCTCC
 CCGTCGGGTTCCCCAGCCACAGCCTTACCTACGGGCTCCTGACTCCGCAAGGCTT
 15 CCAGAAGATGCTCGAACCACCGGCCGGGGCCTCGGGGCAGCAGTGAGGGAGGC
 GTCCAGCCCCCACTCAGCTCTTCTCCTCCTGTGCCAGGGGCTCCCCGGGGGATG
 AGCATGGTGGTTCCTCGGAGCCCCCTGGCTCGGGACGTCTGAGAAGATGCCG
 GTCATGAGGCTGTTCCCTTGCTTCTGCAGCTCCTGGCCGGGCTGGCGCTGCCTG
 CTGTGCCCCCCCAGCAGTGGGCCTTGTCTGCTGGGAACGGCTCGTCAGAGGTGGA
 20 AGTGGTACCCTTCCAGGAAGTGTGGGGCCGCAGCTACTGCCGGGCGCTGGAGAG
 GCTGGTGGACGTTCGTGTCAGAGTACCCAGCGAGGTGGAGCACATGTTACGCC
 ATCCTGTGTCTCCCTGCTGGGCTGCACCGGCTGCTGCGGCGATGAGAATCTGCAC
 TGTGTGCCGGTGGAGACGGGCAATGTACCATGCAGCTCCTAAAGATCCGTTCTG
 GGGACCGGCCCTCCTACGTGGAGCTGACGTTCTCTCAGCACGTTTCGCTGCGAATG
 25 CCGGCCTCTGCGGGAGAAGATGAAGCCGGAAGGTGCGGCGATGCTGTTCCCCG
 GAGGTAACCCACCCCTTGGAGGAGAGAGACCCCGCACCCGGCTCGTGTATTTATT
 ACCGTCACACTCTTCAGTGACTCCTGCTGGTACCTGCCCTCTATTTATTAGCCAAC
 TGTTTCCCTGCTGAATGCCTCGCTCCCTTCAAGACGAGGGGCAGGGAAGGACAG
 GACCCTCAGGAATTCAGTGCCTTCAACAACGTGAGAGAAAGAGAGAAGCCAGCC
 30 ACAGACCCCTGGGAGCTTCCGCTTTGAAAGAAGCAAGACACGTGGCCTCGTGAG
 GGGCAAGCTAGGCCCCAGAGGCCCTGGAGGTCTCCAGGGGCCTGCAGAAGGAAA
 GAAGGGGGCCCTGCTACCTGTTCTTGGGCCTCAGGCTCTGCACAGACAAGCAGCC
 CTTGCTTTCGGAGCTCCTGTCCAAAGTAGGGATGCGGATTCTGCTGGGGCCGCCA
 CGGCCTGGTGGTGGGAAGGCCGGCAGCGGGCGGAGGGGAFTCAGCCACTTCCCC
 35 CTCTTCTTCTGAAGATCAGAACATTACAGCTCTGGAGAACAGTGGTTGCCTGGGGG
 CTTTGGCACTCCTTGTCCCCCGTGATCTCCCCTCACACTTTGCCATTTGCTTGTAC
 TGGGACATTGTTCTTCCGGCCGAGGTGCCACCACCCTGCCCCCACTAAGAGACA
 CATAAGAGTGGGCCCCGGGCTGGAGAAAGAGCTGCCTGGATGAGAAACAGCTC
 AGCCAGTGGGGATGAGGTCACCAGGGGAGGAGCCTGTGCGTCCCAGCTGAAGGC
 40 AGTGGCAGGGGAGCAGGTTCCCCAAGGGCCCTGGCACCCCCACAAGCTGTCCCT
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 AAACGC

SEQ ID NO: 591

45 >20039 BLOOD Hs.2064 gnl|UG|Hs#S1973578 Human DNA sequence from clone RP11-
 124N14 on chromosome 10. Contains the VIM gene for vimentin, the DNMT2 gene for DNA
 methyl transferase 2, the 5' end of the gene for intrinsic factor-B12 receptor precursor, ESTs,
 STSs, GSSs and two putative CpG islands /cds=(492,1892) /gb=AL133415 /gi=7160477
 /ug=Hs.2064 /len=2215

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 5 ACCCGCCACCCCTCCCCGCTTCTCGCTAGGTCCCTATTGGCTGGCGCGCTCCGCG
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 10 CATGTCCACCAGGTCCGTGTCTCTGCTCCTACCGCAGGATGTTTCGGCGGGCCG
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 20 ATCATGCGCCTCCGGGAGAAATTGCAGGAGGAGATGCTTCAGAGAGAGGAAGCC
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 35 TTATCAACGAAACTTCTCAGCATCACGATGACCTTGAATAAAAATGCACACACT
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 GTTTACAACATAATCTAGTTTACAGAAAAATCTTGTGCTAGAATACTTTTTAAAA
 40 GGTATTTTGAATACCATTAAAACTGCTTTTTTTTTTCCAGCAAGTATCCAACCAAC
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SEQ ID NO: 592

>20082 BLOOD 025811_Mm.1 X61800 g50378 Mouse mRNA for C/EBP delta. 0

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5 CCTGGTTGCGGCGCTTGGCCTTGTGCGGGCTCTTGCGCACAGCGATGTTGTTGCG
CTCGCGCCGCTGCCGGTACTCCGGGCTGCCGCGGTCCGGACCCCTCTTGCCCGCG
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GCTCCGGCGAAGTGGGTGGAGT

10 SEQ ID NO: 593

>20091 BLOOD 235852.13 M15395 g186933 Human leukocyte adhesion protein (LFA-
1/Mac-1/p150,95 family) beta subunit mRNA. 0

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15 ACACCGAGGGACATGCTGGGCCTGCGCCCCCACTGCTCGCCCTGGTGGGGCTGC
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25 TFCGTGAACACGCACCCTGATAAGCTGCGAAACCCATGCCCAACAAGGAGAAA

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30 CGCGGGCGACGGGAAGCTGGGCGCCATCCTGACCCCCAACGACGGCCGCTGTCA

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CGTGGGGGAGCTGTCTGAGGACTCCAGCAATGTGGTCCATCTCATTAAGAATGCT

35 TACAATAAACTCTCCTCCAGGGTCTTCTGGATCACAACGCCCTCCCCGACACCC

TGAAAGTCACCTACGACTCCTTCTGCAGCAATGGAGTGACGCACAGGAACCAGC

CCAGAGGTGACTGTGATGGCGTGCAGATCAATGTCCCGATCACCTTCCAGGTGAA

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40 GACCAGAGCAGAGACCGCAGCCTCTGCCATGGCAAGGGCTTCTTGGAGTGCCGC

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45 TGTGAGCGCTACAACGGCCAGGTCTGCGGCGGGCCCGGGAGGGGGCTCTGCTTC

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 5 CATCGTCGGGGGCACCGTGGCAGGCATCGTGCTGATCGGCATTCTCCTGCTGGTC
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 10 TGCCACAGCTCTTGAGGATGTCACCAATTAACCAGAAATCCAGTTATTTTCCGCC
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 15 CATTAATTATATTGTTAATCAATCACGTGTATAGAAAAAAATAAACTTCAATA
 CAGGCTGTCCATGGAAAAAAAAGGG

SEQ ID NO: 594

>20222 BLOOD gi|32025|emb|Y00291.1|HSHAPRA Human hap mRNA encoding a DNA-
 20 binding hormone receptor

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 GAGAACTTGGGATCTTTCTGGGAAGCCCCCGCCCGGCTGGATTGGCCGAGCAAA
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 TCTGTCAFAATTCATGATTCGGGGGCTGGGAAAAAGACCAAGAGCCTACGTGCCA
 25 AAAAAAGGGGCAGAGTTTGATGGAGTTGGGTGGACTTTTCTATGCCATTTGCCTCC
 ACACCTAGAGGATAAGCACTTTTGCAGACATTCAGTGCAAGGGAGATCATGTTTG
 ACTGTATGGATGTTCTGTCACTGAGTCCTGGGCAAATCCTGGATTTCTACACTGC
 GAGTCCGTCTTCTGTGATGCTCCAGGAGAAAGCTCTCAAAGCATGCTTCAGTGGA
 TTGACCCAAACCGAATGGCAGCATCGGCACACTGCTCAATCAATTGAAACACAG
 30 AGCACCAGCTCTGAGGAACTCGTCCCAAGCCCCCATCTCCACTTCCTCCCCCTC
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 15 GTGTAACCTGCCAGTTCAGTTAATCAAATGTCATTTGTTCAATTGTTAATGTCACCT
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 TTCAGTGGCTCTGTTTGTACATTTGAGATTGTTTGTGTTAACAATGCTTCTGATGTTTC
 25 ATATACTGTTTACCTTTTCCATGGACTCTCCTGGCAAAGAATAAAATATATTTAT
 TTT

SEQ ID NO: 595

yr12e06.s1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:205090 3'
 30 similar to gb|M87905|HUMALND184 Human carcinoma cell-derived Alu RNA transcript,
 (rRNA); gb:J03934 NAD(P)H DEHYDROGENASE (HUMAN);contains Alu repetitive
 element;; mRNA sequence

gi|1010773|gb|H57941.1|H57941[1010773]: 1-1000

CATAAGCGAAACATGATTTTGGAAATTTTCAGGATGGGGAAAAGAAACAAATAA
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SEQ ID NO: 596

>20244 BLOOD 113392.11 AJ225028 g3892593 Human mRNA for GABA-B R1a receptor.

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SEQ ID NO: 597

>20284 BLOOD 1039926.6 X02488 g179595 Human collagen alpha-2 type I mRNA,

35 complete cds, clone pHCOL2A1.0
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SEQ ID NO: 598

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 transporter 2, complete cds. 0
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SEQ ID NO: 599

>20816 BLOOD 1102307.12 M14058 g179643 Human complement C1r mRNA, complete
cds. 0

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SEQ ID NO: 600

- 5 >20825 BLOOD 1000084.27 AF022375 g3719220 Human vascular endothelial growth
factor mRNA, complete cds. 0

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5 SEQ ID NO: 601

>20881 BLOOD GB_R98877 gi|985478|gb|R98877|R98877 yq67f04.r1 Soares fetal liver
spleen 1NFLS Homo sapiens cDNA clone IMAGE:200863 5' similar to contains Alu
repetitive element;; mRNA sequence [Homo sapiens]

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SEQ ID NO: 602

>20921 BLOOD 478620.65 S62138 g386158 TLS/CHOP=hybrid gene {translocation
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25 TCCAGGCTATGGCCAGAGCAGCTATTCTTCTTATGGCCAGAGCCAGAACACAGGCT
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CAAGGGAGAACCAGGAAACGGAAACAGAGTGGTCATTCCCCAGCCCGGGCTGG
45 AAAGCAGCGCATGAAGGAGAAAGAACAGGAGAATGAAAGGAAAGTGGCACAGC
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GCTACAGCCAACTGTTTCTTTAGATCCAAGAGTTTCGCCACCTCCGCAGCAACCT
5 CGTTCCTGTCTGCCTTTTGTGCTTTCAGTTCTCGGACAATGTTTCCCTAAGATAAA
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GCGCTTGTATCTGCTGTGGCTTGGCTGTTGTAACAGTCTCTACAACCTGCTGGCTTC
GGGGACGTTTTGCCTGGAGAACAACAAAGTTATCACCAGCAACCATAAATATCC
10 CCTAACCTCCAGTTTTATACAGCATCTCAGAGGGAAAGTGGTTACCTTTAAGTCG
AAGGTCTCTTCTAGTTAAGACAGGAAAGAAAACTGTAAGTGAGGAAGCGGCAG
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GTGATGCTGTGGCTGTTGTGGAGCGAGGGCACAGCCTTTAGCTTTCTCACCTGGC
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15 AAGGGACTGACCTGTAAAAAAGAGTTCAGAATCATCTACTGATTGGATACAG
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GAAAGAACGAGCTTAACACTGAGCTAATATCTGCTGATTTTAGGAAATTAGCTGT
AGCTTTCCCTGTGAAACCCCAAATAATTTGTAGGGTCAAAGATTCTTTAAGCTCT
CTAAGGATGCTAGGCTGATCCAGAAGTTTAGCAATGTACTTACTTTTTTCATTTTGT
20 GTCAAAGAGGAAATGGCTTTTCTGTATTTTCCCTGCCCACTATCTGCTAGCATTAT
GGAGACTAGGTGATCACAGTGTTTCTTCAAATATCTGTTTACCAGTTAGTTTTGTG
TGCCAGGTTCTGGTTTTCTGGCATGAAGAACAATGAAGATGTACAGATAATTCGGG
ACTTGTGAACGACTACCAAGGAGTTTATATCAGAACTTAGGAGTCCCATGACCA
AAGTAACACTGGAGAGATGTTAGGTCTTCTCTCACCCACTCCAAAAGCTGCATGG
25 CAAGAGTATCAATTTTAAGAGAGGCTGGCTCTTCCACCTACTGTGCCAATCTGGT
GTCCTGCTGGTAAGGTACACAGGAAGTTTGTGAGCAGGATACTGCAGGCTGGAG
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GAAG

30 SEQ ID NO: 603

>20929 BLOOD 896499.1 X60111 g34768 Human mRNA for MRP-1. 0

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GCGCGCTTCTAATTCCTCCTACCCACATGCTGTGCCCAATGAAAAGTATGGTCA
35 GCGAGCGAAGGTTTGCAAGGAGACAGACGAGGGCGAAATTAAGCCAGGCGGCT
TCCCTTTAAATCCTCGCAAAGCAGAAGGGCCCTCACTCTGGCAGCAGGCCTTGG
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CCGGTCCGGCGCCCAGACCAAACGCGGGGGAACCGGAAGGGCGAGGCCTCCACC
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40 AAGAGCATCTTCGAGCAAGAACTAATAATAATAATTCCAGCTTCTACACAGGA
GTCTATATTCTGATCGGAGCCGGCGCCCTCATGATGCTGGTGGGCTTCCTGGGCT
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CTTGGTGATATTCGCCATTGAAATAGCTGCGGCCATCTGGGGATATTCCCACAAG
GATGAGGTGATTAAGGAAGCCAGGAGTTTACAAGGACACCTACAACAAGCTGA
45 AAACCAAGGATGAGCCCCAGCGGGAAACGCTGAAAGCCATCCACTATGCGTTGA
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TGTCCCTGCCCCCATTGCTCTGGACAAACCCTGCAAGCATGAAAGTGACAGCAGC
CAAGTGCTGCTTCAGCAAGACCCGTTCTGCCTGTGAAAGGGCCCCAGGGCACCC

ATCTCTTTCTCTCCCACTTTGGGCCCTCTGTTTACTCAAGGGCAATAAAACAAAG
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AAGCTCTCAAGGGCAGGCGTGCTTCTGAGTCTTGGACTCCCACTCTGACTTTGTC
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5 GACCTTACAACCATGTCAGAAATAGACCCCCAAGCAGGGCTGTCCCTCCTCCTTC
CCTGACGTCCTGCCCAGATTTTAGGGATCCACTAGCATAGCCATCCCTTTGTTTCG
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10 CTGTCCTGATGCCATCAAAGAGGTCTTCGACAATAAATTCCACATCATCGGCGCA
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NN
15 NNAAAGCTGAAGTTA
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GGTTTGGTTTGTCTTGGTTTATATTTTTTCAGTTGTTTGTCTTGTATATTA
AGCAGAAATCCTGCAATGAAAGGTACTATATTTGCTAGACTCTAGACAAGATATT
GTACATAAAAGAATTTTTTGTCTTTAAATAGATACAAATGTCTATCAACTTTAAT
20 CAAGTTGTAACCTATATTGAAGACAATTTGATACATAATAAAAAATTATGACAAT
GTCCTGG

SEQ ID NO: 604

20937 BLOOD 476760.8 AF030455 g3169829 Human epithelial V-like antigen precursor

25 (EVA) mRNA, complete cds. 0

GGCAGAGCGGGCTGAGTCACAGGCACAGGTGAGGAATCAACTCAAACCTCCTCTC
TCTGGGAAAACGCGGTGCTTGCTCCTCCCGGAGTGGCCTTGGCAGGGTGTGGAG
CCCTCGGTCTGCCCCGTCCGGTCTCTGGGGCCAAGGCTGGGTTTCCCTCATGTAT
GGCAAGAGCTCTACTCGTGCGGTGCTTCTCTCCTTGGCATAACAGCTCACAGCTC
30 TTTGGCCTATAGCAGCTGTGGAAATTTATACCTCCCGGGTGCTGGAGGCTGTAA
TGGGACAGATGCTCGGTAAATGCACCTTCTCCAGCTTTGCCCTGTGGGTGAT
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TATTCTACTACCACATAGATCCCTTCCAACCCATGAGTGGGCGGTTTAAGGACCG
GGTGTCTTGGGATGGGAATCCTGAGCGGTACGATGCCTCCATCCTTCTCTGGAAA
35 CTGCAGTTCGACGACAATGGGACATACACCTGCCAGGTGAAGAACCCACCTGAT
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CTGAGATCCACTTCTGGCTCTGGCCATTGGCTCTGCCTGTGCACTGATGATCATA
ATAGTAATTGTAGTGGTCCTCTTCCAGCATTACCGGAAAAAGCGATGGGCCGAA
AGAGCTCATAAAGTGGTGGAGATAAAATCAAAAGAAGAGGAAAGGCTCAACCA
40 AGAGAAAAAGGTCTCTGTTTATTAGAAAGACACAGACTAACAATTTTAGATGGA
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45 TCAAGTGCTCATTAGGTTTATAAACAAGAAGCTACATTTTGGCCTTAAGATAC
TACTTACAGTGTTATGACTTGTATACACATATATTGGTATCAAAAGGGATAAAAG
CCAATTTGTCTGTTACATTTCTTTTACAGTATTTCTTTTAGCAGCACTTCTGCTACT
AAAGTTAATGTGTTTACTCTCTTTTCTTCCACATTCTCAATTAAGGTGAGCTA
AGCCTCCTCGGTGTTTCTGATTAACAGTAAATCCTAAATTCAAACCTGTAAATGA

CATTTTTATTTTTATGTCTCTCCTTAACTATGAGACACATCTTGTTTTACTGAATTT
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CAATAGCACAAACGCTAAATCACACAGTAACTACAAAAGGTTACATAGATATGAA
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5 GGAAAAATAATCAACAATGTGGGTCTTTCATGAGCAGTGACGGATAGTTTAGCTT
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10 TCTTTTTTAATTCTAATTCACCTGTTTTATTTTGGGGGAGGAAGACTTTGGTATGGA
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15 CTGCAGATGTTTTTTCTTTTAACAAACCTGGAATTTTCAAACAGATTATCTGTATTT
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ACATATGAACCTCAGTTCTGAAATTCATTACATATCTGTCTCATTCTGCCTTTTAT
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GAAGGCTATATATCCTTTAATCACATTTTATATTTTTTCTTCACAATTCTAACCTTT
20 GAAAATATTATAACTGGATATTTCTTCAAACAGATGTCCTGGATGATGGTCCATA
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AGCTTATGTCTTGGCTAAATAGTCAAGGGGTAATATGGGCCTGTTGTTTAGTGTC
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SEQ ID NO: 605

>20969 BLOOD INCYTE_3358822T6

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30 AGCTCAGGCAGGGGGTGCTCCTGAGTTTCTGTGTGAGATTCCCCAAGCACAGATA
TACTCTGGGGGCTGAGATGGACAAAGGCTTGGGAAACCGCACTTTGTGCTTCTGG
TCCTGCAGTAGCTCCAAACAGGGTTGTGGAGCTGGTGGGGAAAGTTGGGGGTAG
GGGAAAGTTGGGGGTAGGGGAAATTTTGGGCAGTGCCTTCATCAGCCCNGTCCT
AGAGAGAGTAGAGGGGAATGGAAGTGGGGGGAACCNNTGGGGNCAAGAGAA
35 GAGGGGNNGTT

SEQ ID NO: 606

>20988 BLOOD 233843.3 AK001972 g7023569 Human cDNA FLJ11110 fis, clone
PLACE1005921, weakly similar to AIG1 PROTEIN. 0

ATCAGGTGGGCAGGTCCCTTGCAAGTAAATCTGGACAGCTCCTCCCCTCACTT
CCTCTCTTCTCCTGTTTCTCAACATCCTGGCTTAGTATTGTGTGCAAAATCAGAGA
GGGGTGCAAGATCCTGATTTTTTCAAGGAGTTCAAGCGACAATGGCAGCCCAATAC
GGCAGTATGAGCTTCAACCCCAAGCACACCAGGGGCCAGTTATGGGCCTGGAAGG
CAAGAGCCCAGAAATTCCCAATTGAGAATTGTGTAGTGGGTAAAACCGGAGCA
45 GGAAAAAGTGCAACAGGAAACAGCATCCTTGGCCGGAAAGTGTTTCATTCTGGC
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GAAACAGAACTTGTCGTAGTTGACACACCAGGCATTTTCGACACAGAGGTGCC
AATGCTGAAACGTCCAAGGAGATTATTCGCTGCATTCTTCTGACCTCCCCAGGGC
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5 TTGCTGGGCCTGATCCAGCGCGTGGTGAGGGAGAACAAGGAAGGCTGCTACACT
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AGTATGAAGAGAAAATCAGAAAGCTGGAAGATAAAGTGGAGCAGGAAAAGAGA
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10 GCAGCAAAGGGCAAGAACGGAAGTGGAGAGTAAGGATGGGATACTTGAATTAA
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15 GGACAAATTTTCAATTTGTGAAACTCCAAAGCAGAAAGTATTGGTGCTTGCTACC
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25 TTAACCAATTTGATGAATACCCAGTTCTCTTCTTTTCTAGAGAAAGATAGTTGCA
ACCTCACCTCCCTCACTCAACACTTTGAATACTTATTGTTTGGCAGGTCATCCACA
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CAATTATCTCATAAAA

30 SEQ ID NO: 607

>21053 BLOOD INCYTE_g1967662

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NN
35 NNNNNNNNNNNNCTGACCCAGTCACATTAAATGTAGGTGGACACTTGTATACAAC
GTCTCTCACCACATTGACGCGTTACCCGGATTCCATGCTTGGAGCTATGTTTGGG
GGGGACTTCCCCACAGCTCGAGACCCTCAAGGCAATTACTTTATTGATCGAGATG
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TTGGATTTT

40

SEQ ID NO: 608

>21057 BLOOD INCYTE_g819904

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45 AACTGTGAATATAAGCTTTTGGTGCTTGCTATGGAAAAATCAAATCAATAGCTTT
AATGTCTTCTTACAATCTCATTTTGTTCCTACTATAGCTCTGTTTTAGTTAGNATCTG
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TTTTGCCATAGGTAGGAAAAGGGATTTTAAATATTAATAGGCC

SEQ ID NO: 609

>21063 BLOOD 474850.14 AF118224 g6647301 Human matriptase mRNA, complete cds. 0

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5 GATCCGCGTCATCAACCAGACCACCTGCGAGAACCTCCTGCCGCAGCAGATCAC
GCCGCGCATGATGGTGATTCCGGGGGACCCCTGTCCAGCGTGGAGGCGGATGGG
CGGATCTTCCAGGCCCGGTGTGGTGAGCTGGGAGACGGCTGCGCTCAGAGGAACA
AGCCAGGCGTGTACACAAGGCTCCCTCTGTTTCGGGACTGGATCAAAGAGAACA
CTGGGGTATAGGGGCCGGGGCCACCCAAATGTGTAACTGCGGGGCCACCCATC
10 GTCCACCCCAAGTGTGCACGCCTGCAGGCTGGAGACTGGACCGCTGACTGCACCA
GCGCCCCCAGAACATACTGTGAATCAATCTCCAGGGCTCCAAATCTGCCTAG
AAAACCTCTCGCTTCCCTCAGCCTCCAAAGTGGAGCTGGGAGGTAGAAGGGGAGG
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CCCCGCCAGCCCCAAGCTGGGCCGAGGCGCGTTTGTGTATATCTGCCTCCCCTGT
15 CTGTAAGGAGCAGCGGGAACGGAGCTTCGGAGCCTCCTCAGTGAAGGTGGTGGG
GCTGCCGGATCTGGGCTGTGGGGCCCTTGGGGCCACGCTCTTGAGGAAGCCCAGG
CTCGGAGGACCCTGGAAAACAGACGGGTCTGAGACTGAAATTGTTTTACCAGCT
CCCAGGGTGGACTTCAGTGTGTGTATTTGTGTAAATGAGTAAAACATTTATTTCTT
TTT

20

SEQ ID NO: 610

>21080 BLOOD 1218745.1 X04366 g29663 Human mRNA for calcium activated neutral

protease large subunit (muCANP; calpain; EC 3.4.22.17). 0

CAGATCTGGATGGAGTTGTGACCTTTGACTTGTTTAAGTGGTTGCAGCTGACCAT
25 GTTTGCATGAGGCAGGGACTCGGTCCCCCTTGCCGTGCTCCCCCTCCCTCCTCGTCT
GCCAAGCCTCGCCTCCTACCACACCACACCAGGCCACCCCAGCTGCAAGTGCCTT
CCTTGAGCAGAGAGGCAGCCTCGTCCTCCTGTCCCCTCTCCTCCCAGCCACCAT
CGTTCATCTGCTCCGGGC

30 SEQ ID NO: 611

>21089 BLOOD 478379.2 U58913 g4204907 Human chemokine (hmrp-2a) mRNA,
complete cds. 0

GGAAAGCAGTGAGCCCAGGAGTCCCTCGGCCAGCCCTGCCTGCCACCAGGAGGAT
GAAGGTCTCCGTGGCTGCCCTCTCCTGCCTCATGCTTGTTACTGCCCTTGGATCCC
35 AGGCCCGGGTCACAAAAGATGCAGAGACAGAGTTCATGATGTCAAAGCTTCCAT
TGGAATAATCCAGTACTTCTGGACATGCTCTGGAGGAGAAAGATTGGTCCTCAGAT
GACCTTTTCTCATGCTGCAGGATTCATGCTACTAGTGCTGACTGCTGCATCTCCT
ACACCCCACGAAGCATCCCGTGTTCACTCCTGGAGAGTTACTTTGAAACGAACAG
CGAGTGCTCCAAGCCGGGTGTCATCTTCCTCACCAAGAAGGGGCGACGTTTCTGT
40 GCCAACCCCAAGTGAAGCAAGTTCAGGTTTGCATGAGAATGCTGAAGCTGGAC
ACACGGATCAAGACCAGGAAGAATTGAACCTTGTCAGGTGAAGGGACACAAGTT
GCCAGCCACCAACTTTCTTGCCTCAACTACCTTCCTGAATTATTTTTTTAAGAAGC
ATTTATTCTTGTGTTCTGGATTTAGAGCAATTCATCTAATAAACAGTTTCTCACTT
AAAAAAA

45

SEQ ID NO: 612

>21097 BLOOD 197014.6 AF095742 g4588081 Human serine protease ovasin mRNA,
complete cds. 0

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TCCGAATCAGTAGGTGACCCCGCCCCTGGATTCTGGAAGACCTCACCATGGGACG
CCCCCGACCTCGTGCGGCCAAGACGTGGATGTTCTGCTCTTGCTGGGGGGAGCC
5 TGGGCAGGACACTCCAGGGGCACAGGAGGACAAGGTGCTGGGGGGTCA TGAGTGC
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GTGGCGGTGTCCTTG TAGGTGGCAACTGGGTTCCTTACAGCTGCCCACTGTAAAAA
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AGAGCAAGAAATACCTGTGGTTCAGTCCATCCACACCCCTGCTACAACAGCAG
10 CGATGTGGAGGACCACAACCATGATCTGATGCTTCTTCAACTGCGTGACCAGGCA
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GCCAGAAGTGCACCGTCTCAGGCTGGGGCACTGTCACCAGTCCCCGAGAGAATT
TTCCTGACACTCTCAACTGTGCAGAAGTAAAAATCTTTCCCCAGAAGAAGTGTGA
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15 AGGGGCTGACACGTGCCAGGGCGATTCTGGAGGCCCCCTGGTGTGTGATGGTGC
ACTCCAGGGCATCACATCCTGGGGCTCAGACCCCTGTGGGAGGTCCGACAAACC
TGGCGTCTATACCAACATCTGCCGCTACCTGGACTGGATCAAGAAGATCATAGGC
AGCAAGGGCTGATTCTAGGATAAGCACTAGATCTCCCTTAATAAACTCACAAC TC
TCTGAAAAAAAAAAAA

20

SEQ ID NO: 613

>21102 BLOOD INCYTE_3090747H1
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25 AGTGCATCTGGGAATTGCCAGTCCAGCTGGGTAGTCCCAGGCTCCTGTCTTGGGG
ATGTTTCCCCTGTCAGCAAGTAACCTGGTGAAGTCTATTGAAGGCCAGACTNCCC
CCCTAGGGTCACTGCTTCACTAGCCGCNNCCCACCCAG

SEQ ID NO: 614

30 >21104 BLOOD 987163.5 AF082182 g3435251 Human inwardly rectifying potassium
channel Kir7.1 gene, complete intron, and partial cds. 0

GTTTGCCATTTTCTCTTTCTGATAGAGTACAGCTGAGACCCGGACACTGGTTAG
AGGGCTAGGTCGGGTGTTGGCCACTTGAAGATAAGATTAGGTTTGCCATCCATG
TGAGCTACTACTGCTATGTCAGTAAAGCGAATTGAAAAAGCTCGATTTTTTTGGCC
35 GGGCAATCTTCGCCACAAAAGCACCTAAATAAGAAATTATTGATTTTTTTTAGA
ATGAAGACTTTAAATATCAATACTTTTTCTGAATGACAAGTGTATATCAAATATT
TACACATTTCTTGGTGCCATGCCTTTCAGTGAGTCAGGAATTGAACTCATTGTAA
TTTGGTCAGTCTTATTTGCCTGAAGCATTTTCAAAGTACATTTCTGTTTAAAAAC
CATGATTTTCAAGATAGATAAGCAAAATGATTTTGTACAGAGAAATGTAAACTT
40 CATCCTCTAGTTTCTTACAAAGTCAAAGAATTGGTCATTTTCCTATATTCCTGCCTG
TGCTTAAAAAAAAGTAATAGAAAATAAATGCAACTTGGCTACAGCCAGATTACG
TTGAAGTAGAGACTAGGTTTCAAGTAGAATGATTTGGGATGGGGAGGGGACCAA
TAGAATGAGTGATATT

45 SEQ ID NO: 615

>21140 BLOOD 104171.1 AF037447 g6466790 Human ribosomal S6 protein kinase mRNA,
complete cds. 0

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CTGCTAATGGTGTCTGAGCTTTAAACTCTACCTTGCTTTCACTAGTATTAAAAC
CCTAGAAGCACTGTCTCCATCTGGAAGAGTAAAGAATGGTTTCAGTGCTTCTAGG
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5 ATGTCAGTGGTACTGATGAAGGAAGACCTGATCTTCTTGTAATTTACCTGGTGA
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TAATATAGGGATAATAGAAAATAAACTCTTGGAAGCCCCTGATGTTTTATGCCTC
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10 GAGGATCCCAGGATGTTATTTGTAGCAGCTGTTGATCATAGTAGTTCAGGAGATA
TGTCTTTGTTACCCAGCTCAGATCCTAAGTTTCAAGGACTTGGAGTGGTTGAGTC
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15 TCCAGAGAGACTCTGAGACTAAGGGTGAAAGTGGTTTAGTGCTAGAAGGAGACA
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CCTTGATGCTTTACATAGAGAGGGAATTGTGTGCCGCGATTTGAACCCAAACAAC
ATCTTATTGAATGATAGAGGACACATTCAGCTAACGTATTTAGCAGGTGGAGTG
20 AGGTTGAAGATTCCTGTGACAGCGATGCCATAGAGAGAATGTACTGTGCCCCAG
AGGTTGGAGCAATCACTGAAGAACTGAAGCCTGTGATTGGTGGAGTTGGGTG
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AATAAATACTCACACTAETTTGAACATGCCAGAATGTGTCTCTGAAAGAGGGCTCGC
TCACTCATTCACAGGCTCTTGCAGTTCAATCCTCTGGAACGACTTGGTGCTGGAG
25 TTGCTGGTGTGTAAGATATCAAATCTCATCCATTTTTTACCCCTGTGGATTGGGCA
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GTGACAGGCATCTCCAGCACTGAGGCACCTCTGACTCACAGTTACTTATGGAGCA
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30 ATACATATATACACAACCAAGGTGTGATCTGAATTTAATCCACATTTGGTGTGTC
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AAGCTAGAAGTGTAGAATGAAGTTTACTTGACAGAAGGACCTTTACATGGCAG
CTAACAGTGCTTTTTGCTGACCAGGATTGGTTTATATGATTAAATTAATATTTGCT
FAATAATACACTAAAAGTATATGAACAATGTCATCAATGAACTTAAAAGCGAG
35 AAAAAAGAATATACACATAATTTCTGACGGAAAACCTGTACCCTGATGCTGTATA
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SEQ ID NO: 616

>21152 BLOOD 221063.3 U78181 g1871169 Human sodium channel 2 (hBNC2) mRNA,
complete cds. 4e-12

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5 CTTCTTGGTCTAGATGTCTTCTTTGAGGCCCTGACCTCTGAAGCCATGGAGCAG
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10

SEQ ID NO: 617

>21181 BLOOD 410188.1 M77235 g184038 Human cardiac tetrodotoxin-insensitive
voltage-dependent sodium channel alpha subunit (HH1) mRNA, complete cds. 0

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SEQ ID NO: 618

25 >21187 BLOOD 319829.1 AJ009936 g5852062 Human mRNA for nuclear hormone
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SEQ ID NO: 619

35 >21189 BLOOD 232328.1 AF169677 g6808606 Human leucine-rich repeat transmembrane
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SEQ ID NO: 620

>21213 BLOOD 474592.17 AF061749 g3372676 Human tumorous imaginal discs protein

40 Tid56 homolog (TID1) mRNA, complete cds. 0
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SEQ ID NO: 621

>21224 BLOOD 197014.6 AF095742 g4588081 Human serine protease ovasin mRNA,
complete cds. 0

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15 SEQ ID NO: 622

>21240 BLOOD 255990.12 AJ011497 g4128014 Human mRNA for Claudin-7. 0

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SEQ ID NO: 623

>21270 BLOOD INCYTE_1381683H1

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5 CACTGTCAAGTATTTCAATT

SEQ ID NO: 624

>21285 BLOOD 1008401.7 M17783 g183063 Human glia-derived nexin (GDN) mRNA, 5'
end. 0

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25 CGCACTTTCGTGGCAGCCGACGGGAAATCCTATCAAGTGCCAATGCTGGCCCCAGC
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40 TCGGGTGCTGCTGTTTGCCGGTGCCGGCGCCGATTTCTTGGCCCTCTGCTCCAGG
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SEQ ID NO: 625

>21292 BLOOD INCYTE_157873H1

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SEQ ID NO: 626

>21294 BLOOD INCYTE_1594625F6

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10 SEQ ID NO: 627

>21298 BLOOD 441249.1 AF086432 g3483777 Human full length insert cDNA clone
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SEQ ID NO: 628

>21307 BLOOD 336954.1 AF033383 g2739502 Human potassium channel mRNA,
complete cds.0

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SEQ ID NO: 629

>21310 BLOOD 246163.2 AK002158 g7023867 Human cDNA FLJ11296 fis, clone

PLACE1009731, weakly similar to AIG1 PROTEIN. 0

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SEQ ID NO: 630

>21313 BLOOD 271789.7 M94055 g456678 Human voltage-gated sodium channel mRNA,
complete cds. 0

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mRNA, complete cds. 0

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RASI-1 mRNA, splice variant, complete cds. 0

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 GATCCCCTAACTTAGATTTGGCCCCCAACTCCATTTCTGTCTGTCTTAGACAGCC
 CTTCCAACCTGTGTCTCTCTTCTCTGGAGGTCAATGGTGGAGGGAGATGCCTGGG
 TCCTGTTCTTCTACATAAAATGCAAGAAAACAGCATGGCCAGTAAACTGAGCA
 AGGGCCTTGGAATCCTTGAGAATCACATTTATGTGCTTATGATTACGGGCAAGCT
 15 AATTAACCTTGTGTAATCTCAGATTCCCCATTTGCAACATTAGGTAAAGACCAGT
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 TCTGGTACATTTGTGTTTAATAAAAGCTAACTCCATGTTTCAT

SEQ ID NO: 636

20 >21384 BLOOD 403324.1 AF027957 g2739108 Human G-protein-coupled receptor
 (GPR35) gene, complete cds. 0

TGGGAAGAGGATCTGTCCAGGGGTTAGACCTTCAAGGGTGACTTGGAGTTCTTTA
 GGGCAACCATGCTTCTTGGAGAGTTTGTGTTTGTGGGTGTGGGGTCTGGGGCTC
 ACCTCCTCCACATCCTGCCCAGAGGTGGGCAGAGTGGGGGCAGTGCCCTTGCTCC
 25 CCCTGCTCGCTCTCTGCTGACTCCGGCTCCCTGTGCTGCCCCAGGACCATGAATG
 GCACCTACAACACCTGTGGCTCCAGCGACCTCACCTGGCCCCCAGCGATCAAGCT
 GGGCTTCTACGCCTACTTGGGCGTCTGCTGGTGTCTAGGCCTGCTGCTCAACAGC
 CTGGCGCTCTGGGTGTTCTGCTGCCGCATGCAGCAGTGGACGGAGACCCGCATCT
 ACATGACCAACCTGGCGGTGGCCGACCTCTGCCTGCTGTGCACCTTGCCCTTCGT
 30 GCTGCACTCCCTGCGAGACAGCCTCAGACACGCCGCTGTGCCAGCTCTCCAGGG
 CATCTACCTGACCAACAGGTACATGAGCATCAGCCTGGTCACGGCCATCGCCGTG
 GACCGCTATGTGGCCGTGCGGCACCCGCTGCGTGCCCGCGGGCTGGCGGTCCCCC
 AGGCAGGCTGCGGGCCGTGTGCGCGGTCTCTGGGTGCTGGTTCATCGGCTCCCTGG
 TGGCTCGCTGGCTCCTGGGGATTGAGGAGGGCGGCTTCTGCTTCAGGAGCACCCG
 35 GCACAATTTCAACTCCATGGCGTTCCCGCTGCTGGGATTCTACCTGCCCTGGCC
 GTGGTGGTCTTCTGCTCCCTGAAGGTGGTGAAGTGGCCCTGGCCAGAGGCCACCCA
 CCGACGTGGGGCAGGCAGAGGCCACCCGCAAGGCTGCCCGCATGGTCTGGGCCA
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 40 TACATAACCAGCAAGCTCTCAGATGCCAACTGCTGCCTGGACGCCATCTGCTACT
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 TAAGGCCCAAAAAGCCAGGACTCTCTGTGCGTGACCCTCGCCTAAGAGGCGTG
 CTGTGGGCGCTGTGGGCCAGGTCTCGGGGGCTCCGGGAGGTGCTGCCTGCCAGG
 GGAAGCTGGAACCAAGTAGCAAGGAGCCCGGATCAGCCCTGAACTCACTGTGTA
 45 TTCTCTTGGAGCCTTGGGTGGGCAGGGACGGCCAGGTACCTGCTCTCTTGGGAA
 GAGAGAGGGACAGGGACAAGGGCAAGAGGACTGAGGCCAGAGCAAGGCCAATG
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ACCCTTTCACCCCTTCCCACCCCCACCCACCTGGAGCGTGAGCAGGGGCTGTTGG
AAGCTCCTGGCAGGACCACAGTAGAGGGCCCCAGCCCAGGTTTCCTTGCTCAAG
5 ACAGGGCTGGGAGCAGCTGATCTCCATGTAGGGGCTGCAACAGCGGTGCAAGGG
GGGGTGAACCAAGGTCAAGCAGGTGAGGGTGGGGTGGGGTGGGCTGGCAGTGAA
GGGGTGGCCAGGGTCTGTCAAGGAACCCAGCCCTCTTCTCCTTCCTTCAGGNAC
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10

SEQ ID NO: 637

>21387 BLOOD 014253.1 CAA04483.1 g2326776 sodium/glucose symporter-like protein
8e-42

CTGGCAGCAATGGGGCCTGGAGCTTCAGGGGACGGGGTCAGGACTGAGACAGCT
15 CCACACATAGCACTGGACTCCAGAGTTGGTCTGCACGCCTACGACATCAGCGTGG
TGGTCATCTACTTTGTCTTCGTCATTGCTGTGGGGATCTGGTTCGTCCATCCGTGCA
AGTCGAGGGACCATTGGCGGCTATTTCTGGCCGGGAGGTCCATGAGCTGGTGG
CCAATTGGAGCATCTCTGATGTCCAGCAATGTGGGCAGTGGCTTGTTTCATCGGCC
TGGCTGGGACAGGGGCTGCCGGAGGCCTTGCCGTAGGTGGCTTCGAGTGGAACG
20 CAACCTGGCTGCTCCTGGCCCTTGGCTGGGTCTTCGTCCCTGTGTACATCGCAGC
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CGAGGTGTACATGTCTGTCTCTCATCCTCTACATCTTCACCAAGATCTCGG
TAGGTGTCACTGCAATGTGGTCACTGTGTCTGGAAATGCTAATTAGGGAACTGCT
GAGTGCATCACCATGTGCGTGTGCTGAGGGGAAGCTGACAATCACTGTTGAAA
25 AAAAGGAAAGCAGGACCTATAAACATTTAATGCATGTTCTGCCTCAGCACTGGG
GTAC

SEQ ID NO: 638

>21390 BLOOD 300437.18 M94046 g187393 Human zinc finger protein (MAZ) mRNA. 0

GAATTCCGGGGGTTCCGGCGCTCCGCGGCCCAAGCGCCCTCCTTTCTCCCTCC
30 GCCGGCCGGGGTTGCGGGCGCGGGGCGCCGCGGGGCCATGCGATCTCGGCGCGGC
CCAGCCCCGGCCGGCGGCGCCCCGCCCCCGCTGGAGCCCTGGGGGCCCCCGCTGCG
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GCTGGGCCTGGAATCCCGGGGGGTGGGCGGCCTCATGAACTCCTTCCCGCCACCT
35 CAGGGTCACGCCAGAACCCCCCTGCAGGTCGGGGCTGAGCTCCAGTCCCGCTTCT
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GCCGTGCTGCCGCGCCCCCGGCCCTGCCGCCGCTCTACGGTGGACACAGCGG
40 CCCTGAAGCAGCCTCCGGCGCCCCCTCCGCCACCCCCGCCAGTGTGGCGCCCCGC
GGCCGAGGCCGCGCCCCCGCCTCCGCCGCCACTATCGCCGCGGCGGGCGGCCAC
CGCCGTCTAGCCCCAACCTCGACGGTCGCCGTGGCCCCGGTCGCGTCTGCCTTG
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TTCAAGAACGGCTACAATCTCCGGAGGCACGAAGCCATCCACACGGGAGCCAAG
45 GCCGGCCGGGTCCCCTCGGGTGTATGAAGATGCCGACCATGGTGCCCTGAGCC
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GCCGGCGGGCGGCGCTGCCGCAGTGGCCGCCGGTGGCGTGGTGACCACGACCGCC
TCGGGGGAAGCGCATCCGGAAGAACCATGCCTGCGAGATGTGTGGCAAGGCCTT
CCGCGACGTCTACCACCTGAACCGACACAAGCTGTCGCACTCGGACGAGAAGCC

CTACCAGTGCCCGGTGTGCCAGCAGCGCTTCAAGCGCAAGGACCGCATGAGCTA
CCACGTGCGCTCACATGACGGCGCTGTGCACAAGCCCTACAACTGCTCCCACTGT
GGCAAGAGCTTCTCCCGGCCGGATCACCTCAACAGTCACGTCAGACAAGTGCAC
TCAACAGAACGGCCCTTCAAATGTGAGAAATGTGAGGCAGCTTTCGCCACGAAG
5 GATCGGCTGCGGGCGCACACAGTACGACACGAGGAGAAAGTGCCATGTCACGTG
TGTGGCAAGATGCTGAGCTCGGCTTATATTTTCGGACCACATGAAGGTGCACAGCC
AGGGTCTCACCATGTCTGTGAGCTCTGCAACAAAGGTAAGTGGTGAGGTTTGTCC
AATGGCGGCGGCAGCGGCGGCGGCAGCGGCAGCGGCGGCAGCGGCAGCAGCGG
CAGCAGTAGCAGCCCCCTCCACAGCTGTGGGCTCCCTCTCGGGGGCGGAGGGGG
10 TGCCTGTGAGCTCTCAGCCACTTCCCTCCCAACCCTGGTGAGCTCCAAGTTGGTT
GCGGGGGAGAGGGGAGAATGGAGTAGAGTCCCTTGGTACAAGCTCCTCTCCCCC
CTCTTTTCCCACTCCTATTTCCCTACCAACCAAGGAGCCTCCAGAAGGAAA
GGAGGAAGAAATGTTTTCTTAGGGGAATTCGCTAGGTTTTAACGATTTGTTTCTC
CTGCTCCTCTTCTATCAGACCTGACCCACACAAACCTGTCCCCTCGGTTGTGTTG
15 AAGTCCCCTGGACAGTGGGCAGGGGTGGCAGAGGACACGAGCAGCCACTGCCCG
TACCCCTCTCCTCTCTGTAAGCCCATGCCCTGTCTTCCCAGGGACTTGTGAGCCT
CTTCCCTCGACGGTCTCTTCTCTCCTTCCAGTCTCTCCCCCTGCTGTCTGCAGCC
CCTCCCCGGGGAGTTGGTGCTTTCTTTTCTTTTTTTTTTCCCAGGGGGAGGGAG
GAGAGGAAGGAGGGGGGATCAGAGCTGTCCCAAGAGGGAAAGCGGTGAGGTTT
20 GAGGAGGGGCAGAAGCAGGGCCGGCAAAGGTTGTACCTTCATAAGGTGGTATGG
GGGGTTGGGGTCAGGCCCTGAACATCGTCCTACTTGAGAATCTGTCAGGGGAAA
AAGTCAAGGGGAGCAGGAGGAAGAGCCAGGAGGGCCAGAGGCAGAGAAAGAGA
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GGGGGGGGGGAATGCAGCCAGTGTCCCCTCCCCTCTTCCACCCCAAGCTCGAGC
25 CCTGGTCTTGTCTTTTCATCCCTCTTCCCCACGACAGAAGAAGTTGTGGCCCTGGC
CATGTCATCGTGTTCCTGTGTCCCCTGCATGTACCCCAACCCTCCACCCCTTCCTTT
TGCGCGGAACCCATTACAATAAATTTAAATAAAATCCTGTTTCTGGCTCTGGAA
AA

30 SEQ ID NO: 639

>21406 BLOOD 040519.2 AF103796 g4185795 Human placenta-specific ATP-binding
cassette transporter (ABCP) mRNA, complete cds. 0

GCGCCTCCACGCGCGCGCGCGCGACGTGATCGCTCGGGCGCGCCGGGCGTGG
TTGGGGGAAGGGGTTGTGCCGCGCGACGGTCTGCGTGCTGTGCCCACTCAAAG
35 GTTCCGGGCGCGCAGGAGGGAAGAGGCAGTGCTCGCCACTCCCCTGAGATTGA
GAGACGCGCAAGGAGGCAGCCTGTGGAGGAACTGGGTAGGATTTAGGAACGC
ACCGTGCACATGCTTGGTGCTTGTGTTAAGTGAAACTGCTGCTTTAGAGTTTGT
TGGAAGGTCCGGGTGACTCATCCCAACATTTACATCCTTAATTGTTAAAGCGCTG
CCTCCGAGCGCACGCATCCTGAGATCCTGAGCCTTGGTTAAGACCGAGCTCTAT
40 TAAGCTGAAAAGATAAAAACTCTCCAGATGTCTTCCAGTAATGTCGAAGTTTTTA
TCCCAGTGTCAAGGAAACACCAATGGCTTCCCCGCGACAGCTTCCAATGACCT
GAAGGCATTTACTGAAGGAGCTGTGTTAAGTTTTTATAACATCTGCTATCGAGTA
AACTGAAGAGTGGCTTTCTACCTTGTGCAAAACCAGTTGAGAAAGAAATATTAT
CGAATATCAATGGGATCATGAAACCTGGTCTCAACGCCATCCTGGGACCCACAG
45 GTGGAGGCAAATCTTCGTTATTAGATGTCTTAGCTGCAAGGAAAGATCCAAGTGG
ATTATCTGGAGATGTTCTGATAAATGGAGCACCGCGACCTGCCAATTTCAAATGT
AATTCAGGTTACGTGGTACAAGATGATGTTGTGATGGGCACTCTGACGGTGAGA
GAAAACCTACAGTTCTCAGCAGCTCTTCGGCTTGCAACAACTATGACGAATCATG
AAAAAAACGAACGGATTAACAGGGTCATTCAAGAGTTAGGTCTGGATAAAGTGG

CAGACTCCAAGGTTGGAACCTCAGTTTATCCGTGGTGTGTCTGGAGGAGAAAGAA
 AAAGGACTAGTATAGGAATGGAGCTTATCACTGATCCTTCCATCTTGTTCTTGGA
 TGAGCCTACAACCTGGCTTAGACTCAAGCACAGCAAATGCTGTCTTTTGCTCCTG
 AAAAGGATGTCTAAGCAGGGACGAACAATCATCTTCTCCATTTCATCAGCCTCGAT
 5 ATTCATCTTCAAGTTGTTTGATAGCCTCACCTTATTGGCCTCAGGAAGACTTATG
 TTCCACGGGCTGCTCAGGAGGCTTGGGATACTTTGAATCAGCTGGTTATCACT
 GTGAGGCTATAATAACCCTGCAGACTTCTTCTTGACATCATTAATGGAGATTC
 CACTGCTGTGGCATTAAACAGAGAAGAAGACTTTAAAGCCACAGAGATCATAGA
 GCCTTCCAAGCAGGATAAGCCACTCATAGAAAAATTAGCGGAGATTTATGTCAA
 10 CTCCTCCTTCTACAAAGAGACAAAAGCTGAATTACATCAACTTTCCGGGGGTGAG
 AAGAAGAAGAAGATCACAGTCTTCAAGGAGATCAGCTACACCACCTCCTTCTGT
 CATCAACTCAGATGGGTTTCCAAGCGTTCATTCAAAAACCTTGCTGGGTAATCCCC
 AGGCTCTATAGCTCAGATCATTGTACAGTCTGACTGGGACTGGTTATAGGTGC
 CATTTACTTTGGGCTAAAAAATGATTCTACTGGAATCCAGAACAGAGCTGGGGTT
 15 CTCTTCTTCTGACGACCAACCAAGTGTTCAGCAGTGTTCAGCCGTGGAACCTT
 TGTGGTAGAGAAGAAGCTCTTCATACATGAATACATCAGCGGATACTACAGAGT
 GTCATCTTATTTCTTGGAAAACCTGTTATCTGATTTATTACCCATGAGGATGTTAC
 CAAGTATTATATTACCTGTATAGTGTACTTCATGTTAGGATTGAAGCCAAAGGC
 AGATGCCTTCTTCGTTATGATGTTTACCCTTATGATGGTGGCTTATTCAGCCAGTT
 20 CCATGGCACTGGCCATAGCAGCAGGTCAGAGTGTGGTTTCTGTAGCAACACTTCT
 CATGACCATCTGTTTTGTGTTTATGATGATTTTTTCAGGTCTGTTGGTCAATCTCA
 GAACEATTGCATCTTGGCTGTGATGGCTTCAGTACTTCAGCATTCACGATATGG
 ATTACGGCTTTGCAGCATAATGAATTTTTGGGACAAAACCTTCTGCCCAGGACTC
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 25 TTGGTAAAGCAGGGCATCGATCTCTCACCTGGGGCTTGTGGAAGAATCACGTGG
 CCTTGGCTTGTATGATTGTTATTTTCTCACAAATTGCCTACCTGAAATTGTTATTTT
 TAAAAAATATTCTTAAATTTCCCCTTAATTCAGTATGATTTATCTCACATAAAA
 AAGAAGCACTTTGATTGAAGTATTCAATCAAGTTTTTTTGTGTTTCTGTTCCCT
 TGCCATCACACTGTTGCACAGCAGCAATTGTTTTAAAGAGATACATTTTTAGAAA
 30 TCACAACAACTGAATTAAACATGAAAGAACCCAAGACATCATGTATCGCATAT
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 TCTAAAAAAGGAGAATTGAATTCTGGAACTCCTGACAAGTTATTACTGTCTCTG
 GCATTTGTTTCTCCTCATCTTTAAATGAATAGGTAGGTTAGTAGCCCTTCAGTCTTA
 ATACTTTATGATGCTATGGTTTGCCATTATTTAATAAATGACAAATGTATTAATGC
 35 TATACTGGAAATGTAAAATTGAAAATATGTTGGAAAAAAGATTCTGTCTTATAGG
 GTAAAAAAGCCACCGTGATAGAAAA

SEQ ID NO: 640

>21416 BLOOD 094071.9 M87068 g179896 Human CaN19 mRNA sequence. 0

40 CTCCCACTTCCCACTGTGGCCTGGGTGGGCTCAGGGGCTGCCCTTGACCTGGCCT
 AGAGCCCTCCCCCAGCTGGTGGTGGAGCTGGCACTCTCTGGGAGGGAGGGGGCT
 GGGAGGGAATGAGTGGGAATGGCAAGAGGCCAGGGTTTGGTGGGATCAGGTTG
 AGGCAGGTTTGGTTTCTTAAATGCCAAGTTGGGGGCCAGTGGGGCCACATAT
 AAATCCTCACCTGGGAGCCTGGCTGCCTTGCTCTCCTTCTGGGTCTGTCTCTGC
 45 CACCTGGTCTGCCACAGATCCATGATGTGCAGTTCTCTGGAGCAGGCGCTGGGCT
 GTGCTGGTCACTACCTTCCACAAGTACTCCTGCCAAGAGGGCGACAAGTTCAAGC
 TGAGTAAGGGGGAAATGAAGGAACCTTCTGCACAAGGAGCTGCCAGCTTTGTGG
 GGGAGAAAGTGGATGAGGAGGGGCTGAAGAAGCTGATGGGCAGCCTGGATGAG
 AACAGTGACCAGCAGGTGGACTTCCAGGAGTATGCTGTTTCTGGCACTCATCA

CTGTCATGTGCAATGACTTCTTCCAGGGCTGCCAGACCGACCCTGAAGCAGAAC
TCTTGACTTCCTGCCATGGATCTCTTGGGCCAGGACTGTTGATGCCTTTGAGTTT
TGTATTCAATAAACTTTTTTGTCTGTTGATAATATTTTAATTGCTCAGTGATGTTT
CATAACCCGGCTGGCTCAGCTGGAGTGCTGGGAGATGAGGGCCTCCTGGATCCT
5 GCTCCCTTCTGGGCTCTGACTCTCCTGGAAATCTCTCCAAGGCCAGAGCTATGCTT
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GTTGCTGACTTTTATTTTGTCAAATAAAGATATT

SEQ ID NO: 641

10 >21419 BLOOD 406378.10 M29696 gl186365 Human interleukin-7 receptor (IL-7) mRNA,
complete cds. 0
CAGGGCTGGCTTTTTTTTTTTTAAATAAGATAGCTGGTGCCCAAGATTGTTTTCCAC
CTTAAGGATAAAACCTGTTAAGAAAGCCTGAACAATTACAAAAAAGGAAGAAAA
GGAGACTTGGCCAACTGGTGTGAGGAGTCTTAACAAGGTCATAGTTTGCCAGCCC
15 CTGCCCTAAACAAATAATTCTTGAATGCCTACTGTGGTGTGTAAGATATGAGTAA
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GGAAGTTGGAGGAGACTTGGAAGATGCAGAACTGGATGACTACTCATTCTCATG
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GACCCAGATGTCAACACCACCAATCTGGAATTTGAAATATGTGGGGCCCTCGTGG
20 AGGTAAAGTGCCTGAATTTCAAGAACTACAAGAGATATATTTTCATCGAGACAA
AGAAATCTTACTGATTGGAAAGAGCAATATATGTGTGAAGGTTGGAGAAAAGA
GTCTAACCTGCAAAAAAATAGACCTAACCACTATAGTTAAACETGAGGCTCCTTT
TGACCTGAGTGTGATCTATCGGGAAGGAGCCAATGACTTGTGGTGACATTTAAT
ACATCACACTTGCAAAAGAAGTATGTAAAAGTTTTTAATGCATGATGTAGCTTACC
25 GCCAGGAAAAGGATGAAAACAAATGGAAGCATGTGAATTTATCCAGCACAAAGC
TGACACTCCTGCAGAGAAAAGCTCCAACCGGCAGCAATGTATGAGATTAAAGTTC
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30 GTGTTATGGAAGAAAAGGATTAAGCCTATCGTATGGCCCAGTCTCCCCGATCATA
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TCAATCCTGAAAGTTTCTGGACTGCCAGATTTCATAGGGTGGATGACATTCAAGC
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ATCTGAGAAAGCAGAGGCTTGGAGGGGATGTGCAGAGCCCCAACTGCCCATCTGA
35 GGATGTAGTCATCACTCCAGAAAGCTTTGGAAGAGATTTCATCCCTCACATGCCTG
GCTGGGAATGTCAGTGCATGTGACGCCCCCTATTCTCTCCTCTTCCAGGTCCCTAG
ACTGCAGGGAGAGTGGCAAGAATGGGCCTCATGTGTACCAGGACCTCCTGCTTA
GCCTTGGGACTACAAACAGCACGCTGCCCCCTCCATTTTCTCTCCAATCTGGAAT
CCTGACATTGAACCCAGTTGCTCAGGGTCAGCCCATTCTTACTTCCCTGGGATCA
40 AATCAAGAAGAAGCATATGTCACCATGTCCAGCTTCTACCAAAACCAGTGAAGT
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GTCTAGAGTTCTAGTCTCCCTCACAGCACAGAGAAGACAAAATTAGCAAAACC
CCACTACACAGTCTGCAAGATTCTGAAACATTGCTTTGACCACTCTTCTGAGTTC
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45 CAAGGTTTAAAGGTGACCCAATGATTGAGTATTTAAAAAAGAGGAAAGAA
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5 GGAAACTTACATATAATCCCTCCGGGACAATGAGCAAAAACTAGGACTGTCCCC
AGACAAATGTGAACATACATATCATCACTTAAATTTAAATGGCTATGAGAAAGA
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10 CCAAGACAGTGATTCTCTTGCTGCTACCACCCAAGTGCATCCGTCCATGATCTCA
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15 GAGACGTATTATTAATGCTTGACATATATCATCTTGCTTTCTTGGTCTAGACTGA
CTTCTAATGACTAACTCAAAGTCAAGGCAACTGAGTAATGTCAGCTCAGCAAAGT
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20 CTTTATTTAGGGGGACTAGGTGTTTTCTGATATTTTAGTTTTCTTGTTTGTGTTTT
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25 TTGATAGGCATTTATGGAAAGCCTGCTACATGTCAATCATACTGTTAGGCACAGG
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35 TAGAAAAACATCGAGATATCTCCAGCTCTAAAATCCTTTGTTTCAATGTTGTTTG
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CCTAGGGACAATGTGTAATGTAAGATTACTAATTGGTTCTGCCCAATCTCCTTTC
AGATTTTATTAGGAAAAAAAATAAACCTCCTGATCGGAGACAATGTATTAATC
40 AGAAGTGTAACCTGCCAGTTCTATATAGCATGAAATGAAAAGACAGCTAATTTG
GTCCAACAAACATGACTGGGTCTAGGGCACCCAGGCTGATTCAGCTGATTTCTTA
CCAGCCTTTGCCTCTTCCTTCAATGTGGTTTTCCATGGGAATTTGCTTCAGAAAAGC
CAAGTATGGGCTGTTTACAGAGGTGCACACCTGCATTTTCTTAGCTCTTCTAGAGGG
GCTAAGAGACTTGGTACGGGCCAGGAAGAATATGTGGCAGAGCTCCTGGAAATG
45 ATGCAGATTAGGTGGCATTTTTGTGAGCTCTGTGGTTTATTGTTGGGACTATTCTT
TAAAATATCCATTGTTCACTACAGTGAAGATCTCTGATTTAACCGTGTACTATCC
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TAATAACCATCTCATATTTAATTAAATGGTATAGAAGAACAA

SEQ ID NO: 642

>21422 BLOOD 354768.27 M18981 g179767 Human prolactin receptor-associated protein (PRA) gene, complete cds. 0

5 CCGAGCTGGCCTCCGGGGCACCGACCGCTATAAAGGCCAGTCGGACTGCGACAC
AGCCCATCCCCTCGACCGCTCGCGTCGCATTTGGCCGCCTCCCTACCGCTCCAAG
CCCAGCCCTCAGCCATGGCATGCCCCCTGGATCAGGCCATTGGCCTCCTCGTGGC
CATCTTCCACAAGTACTCCGGCAGGGAGGGTGACAAGCACACCCTGAGCAAGAA
GGAGCTGAAGGAGCTGATCCAGAAGGAGCTCACCATTGGCTCGAAGCTGCAGGA
TGCTGAAATTGCAAGGCTGATGGAAGACTTGGACCGGAACAAGGACCAGGAGGT
10 GAACTTCCAGGAGTATGTCACCTTCCTGGGGGCCTTGGCTTTGATCTACAATGAA
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CTCTGAGTCAAATCCAGTGGTGGGTTATTGTACAATAACCCACCACTGGATTTGA
CTCAGAGAGGACCCCCAGAGGGTGTCTCCATCTTCCCTATTTATTTTCAGCCCTTG
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15 AAGTTCACCTCCTGGTCCTTGTTCCGGTCCAAGTCTTCCATCAGCCTTGCAATTTTC
AGCATCCTGCAGCTTCGAGCCAATGGTGAGCTCCTTCTGGATCAGCTCCTTCAGC
TCCTTCTTGCTCAGGGTGTGCTTGTACCCCTCCCTGCCGGAGTACTTGTGGAAGAT
GGCCACGAGGAGGCCAATGGCCTGATCCAGGGGGCATGCCATGGCTGAGGGCTG
GGCTTGGAGCTGGCACAGCACTGCTGCTCCTGACTATCCCTCCAGCGGGGGAGCG
20 CCACAGATGGCCCCAGTCTGGATCCAGCGGCTGAACTGGGCAGGGGATGGCTGG
ACCCCCAGCGTGAGGGCAGCTGGCCCTGGAAAGTACCCAGGGCTCCTGGAGAGA
ACTCACCGGTAGGGAGGCGGCCAAATGCGACGCGAGC

SEQ ID NO: 643

25 >21425 BLOOD 286742.1 AF105201 g4336773 Human G-protein alpha subunit 14
(Galpha14) mRNA, complete cds. 0

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AAGCACCTTTATCAAGCAGATGNGAATTATCCATGGGTCTGGTTACAGCGACGA
AGACAGAAAGGGGTTACGAAGCTGGTTTACCAAACATATTACCGCCATGCA
30 AGCCATGATCAGAGCGATGGACACGCTAAGGATACAGTATGTGTGTGAACAGAA
TAAGGAAAATGCCAGATAATCAGAGAAGTGGAAAGTGGACAAGGTCTCCATGCT
CTCCAGGGAGCAGGTGGAGGCCATCAAGCAGCTCTGGCAAGATCCAGGCATCCA
GGAGTGTTACGACAGGAGGAGGGAGTACCAGCTGTGCGACTCTGCCAAATATTA
CCTGACTGACATTGACCGCATCGCCACACCATCATTCGTGCCTACCCAACAAGAT
35 GTGCTTCGCGTCCGAGTGCCACACCGGCATCATTGAGTATCCATTTGACTTGG
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SEQ ID NO: 644

15 >21427 BLOOD 337355.1 AL050214 g4884452 Human mRNA; cDNA DKFZp586H2123
(from clone DKFZp586H2123); partial cds. 0
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20 TTGGGGCTCACTTTTCTTCAGCTCCTTCTCATCTCGTCCTTGCCAAGAGAGTACAC
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25 GGGGTACCTTGATGACTTCTATGTGAAGGGGTTCTACTGTGCAGAGTGCCGAGC
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SEQ ID NO: 645

21436 BLOOD 348119.3:U40215 g1594276 Human synapsin IIb mRNA, complete cds. (1)

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SEQ ID NO: 646

>21463 BLOOD 251776.14 X53002 g33952 Human mRNA for integrin beta-5 subunit. 0

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SEQ ID NO: 647

>21515 BLOOD 410296.1 AF085690 g4106439 Human multidrug resistance-associated
protein 3 (MRP3) mRNA, complete cds. 0

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5 CTGGTGCCAGTGTTCATCCGGGCTACAACCGCAGCCGGGATTTTGAGATCATCAG
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10 TCAGATTTGGAATCTAACATCGTGGCTGTGGAGAGGGTCAAGGAGTACTCCAAG
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SEQ ID NO: 648

40 >21518 BLOOD 244943.4 AJ001309 g3171907 Human mRNA for DnaJ protein. 0
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SEQ ID NO: 649

>21530 BLOOD 231654.4 AF056085 g3719225 Human GABA-B receptor mRNA,
complete cds. 0

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10 CCATCATGGGCCTCATGCCGCTCACCAAGGAGGTGGCCAAGGGCAGCATCGGGC
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15 GGCTGGAATCTGGTGCAGCTTTCTTTTGGCTGCAACCACGCCTGTTCTAGCCGATA
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20 GTGTCAAAAAGCTGAAGGGGAATGATGTGCGGATCATCCTTGGCCAGTTTGACC
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35 TCATAAAGATGTCGAGTCCATACATGAACAACCTTATCATCCTTGGAGGGATGCT
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40 GGCATGCTGCTGATCGACCTGTGTATCCTGATCTGCTGGCAGGCTGTGGACCCCC
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5 CACCTCGATCAAAATCCCCAGCTACAGTGGAACACAACAGAGCCCTCTCGAACA
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SEQ ID NO: 650

>21545 BLOOD INCYTE_3384890H1

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15 SEQ ID NO: 651

>21551 BLOOD 235484.21 AF135960 g7416899 Human latent transforming growth factor
beta binding protein 3 mRNA, partial cds. 0

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SEQ ID NO: 652

>21553 BLOOD INCYTE_3437994H1

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SEQ ID NO: 653

>21568 BLOOD 407563.4 Y17829 g4128042 Human mRNA for Homer-related protein
Syn47.0

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30 TCTCTCTTCATAGGACTGTTTAGGCTCTGCATCAAGATTGCNNNNNNNNNNNN
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35 ATTAACAATGTCTAGGTCACATCCCTTTTTGTGTTCAACACAGTGAAGATTATCT
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40 TGCTGGAAGATATTTCACTCTGGTGACTACTCTGGTACACTCTGGTGTCTCTAAT
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45 TGCAGTTACATTTATTTATATATTTTGCAAGAAATCTTTTCTGAATGATCAATGCA
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5 GTTAACTAGGTATTTCAAAACAGGAATTAAATTCAATAGGCTCTTCTCAGTGAAC
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10 GCCTGTGATGTTGAGGAGGGTCTTTTTTAAAGTGTATGCTTGAGTAACTGACTCT
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15 CTTAAGTGAGTTTTTCAGGTGTCTCTGAAAAATTTATAACAATCATGTATTATATGT
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25 TTGGAAATTTTGTGAGTGTTTTTCTTGTCCAATAGAGCCTAATTGTTTCTTTTTTA
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35 AGAATGTACTTTATCTTTTTTCTCCTCCAGTCTTTTACAGATATTTAAAAGCATTTA
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40 CAGCACCATCATAGATTTGATGTTCTGCTGTCATTGNACTGTTGGGAAGCAGTTA
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AGCCAACACCACCACTACCTTTAAAAACTAGTTTATTTGCCCTGTTAAAATTAAA
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SEQ ID NO: 654

>21590 BLOOD INCYTE_3985758H1

GCNACGGTTGGCGCTCGNCCTGGAGCCTGCCCTGGCGTNCCCCCGCGGGCGCAG
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45 NCCTGGAGATGCTGATCGGGACCCCCCGCAGAAGCTACAGATTCTCGTTGACA
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SEQ ID NO: 655

>21591 BLOOD 404604.3 AF122922 g4585369 Human Wnt inhibitory factor-1 mRNA,
complete cds. 0

5 CCCAGCCGTCTAAACGGGAACAGCCCTGGGCTGAGGGAGCTGCAGCGCAGCAGA
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GAGGAGGTCTGAGCAGCATGGCCCGGAGGAGCGCCTTCCCTGCCGCCGCGCTC
TGGCTCTGGAGCATCCTCCTGTGCCTGCTGGCACTGCGGGCGGAGGCCGGGCCG
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10 ACATGATTTTCAGAAAAGCGCAACAGAGAATGCCAGCTATTCTGTCAATATCCAT
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TGTCCTTGCGCTCCCTGGATAAAGGCATCATGGCAGATCCAACCGTCAATGTCCC
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15 CTGAAGGCAACACCATTCTCCAAACACCTCAAAATGCTATCTTCTTTAAACATG
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20 TTTAATGGAGGGACCTGTTTCTACCCTGGAAAATGTATTTGCCCTCCAGGACTAG
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25 CGAAGCCAGCCTCATACATGCCCTGAGGCCAGCAGGCGCCAGCTCAGGCAGCA
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30 TTTAAGTTTTCTAAGTACGTCTGTAGCATGATGGTATAGATTTTCTTGTTTCAGTG
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35 TGTTACATTTTTAAAAATTGCTCTTAATTTTTAAACTCTCAATACAATATATTTTG
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CAGCTCTTACCTAATAAACATTTTATACTGTTTGTATGTATAAAATAAAGGTGCT
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SEQ ID NO: 656

>21600 BLOOD 480735.6 U60477 g1575342 Human apolipoprotein AI regulatory protein-
1/chicken ovalbumin upstream promoter transcription factor II (TFCOUP2) gene, complete
45 cds. 0

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CACGTGCGAGGGCTGCAAGAGCTTCTTCAAGCGCAGCGTGCGGAGGAACCTGAG
CTACACGTGCCGCGCCAACCGGAAGTGTCCCATCGACCAGCACCATCGCAACCA

GTGCCAGTACTGCCGCCTCAAAAAGTGCCTCAAAGTGGGCATGAGACGGGAAGG
TATCGGCCTCTCATTTCTCCTTCCCTCGTCCTGGGTCCCGGGGTCTGGGTACGTT
TGGCTAGCCTGCTCTGGGTAAGGACAAGAAGCCCCAAGCTCTTCTCTTCGTATTG
CAGCGGAAAAGGGTTTTATACTAGAAGCGAGTTCTGCATTGGAACCCAGACCCC
5 AAATCCGCATGCTTTGGCCGACTGATTTCTTCTTTACTCTCTCTTTGGGCTGTTTC
CATTTCTTTGCATTGATTGTGAGTTCACTGGAGTCTGCCTTTCTGCAAGGGATGG
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10 SEQ ID NO: 657

>21611 BLOOD INCYTE_4504614H1

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CCCAGCAGCCTGCCCCCCCACCTCGTGCCCCCCTCGCACAGGAAGTCCCTGCCCA
15 AGGCCGACTGAGGGGTGGGCTGCAGAACGGGGTGGGAATGGGGGACCTGGGCC
TCAGGCCTGCTC

SEQ ID NO: 658

>21621 BLOOD 253228.8 Incyte Unique

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AGCTGGGGAGGGGAGGGGGGCGAGAAGGCGTGAGTGTGCGCGCGCCCGCATGC
GGGGGCGTGGCAGTCAACAGCAACAAACCCACACGCGGCGAGGGGECAGAAACTCC
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25 CAGAGCCTGGCCTGGGAGCCAGGATGGCCATCCACAAAGCCTTGGTGATGTGCC
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30 GAGCCTGCTGGGGACCCAGGTATTCTTCTTCTGGGGACCCTGGGCCTCTTCTGC
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35 TCACCCTGGTTCGGGGCAGTGGCGAGGGCGGCCCTCAGGGCAACAGCAGCGCAG
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40 GCAGCACAACAGTCCCACCTGGGATGACCCACGCTGGCCATCGCCCTCGCCGCC
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GCCAACAGCCAGGTGATGGGCAGTGCCAACTCGACCCTGCGGGCTGAAGACATG
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CAGGTCTTTAGAAACCCCTACGTGTGGGACTGAGTCAGCGGTGGCGAGGAGAGG

CGGTCGGATTGTTGGGGAGGGCCCTGAGGACCTGGCCCCGGGCAAGGGACTCTCCA
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TCCCTCTCTGCCAGTGTGTTGGGTGGGTGTCATGGGTGTCCCCACCCACTCCTCAGT
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5 AACTCCAGCCAAATAGTGTCTCGGGGTGGTGGCTGGGCAGCGCCTATGTTTCT
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10 SEQ ID NO: 659

>21628 BLOOD 255990.10 AJ011497 g4128014 Human mRNA for Claudin-7. 0

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GCTAAGCCGGGTGTCTGTAGCAGAGCCAGAGAACCGGGACACTGAAGAGGGTGC
15 TGAAGGGGGCGACTCTCAGGGATCGAGCCAGGGCCCCCGAAGGTGGGATCGACC
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20 GGGACTCCTGGGGAGCCACCGCCTCCTCCCCAGCGGCGGTCAAACCGGGCAAG
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25 CCTGCTGGCTCACCTCCGAGCCACCTCTGCTGCGCACCGCAGCCTCGGACCTACA
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GCCGCGAGGCCATCGCTTCACTGGAGGGGTCGATTTGTGTGTAGTTTGGTGACAA
30 GATTTGCATTACCTGGCCCAAACCTTTTTGTCTCTTTGGGTGACCGGAAACTC
CACCTCAAGTTTTCTTTTGTGGGGCTGCCCCCAAGTGTCGTTTGTGTTTACTGTAG
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GCCTGCAGTTGCTGGGCTTCTCCATGGGECCTGCTGGGCTGGGTGGGTCTGGTGG
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35 CACGGCCCAGGCCATGTACAAGGGGCTGTGGATGGACTGCGTCACGCAGAGCAC
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CAGGCCACTCGAGCCCTAATGGTGGTCTCCCTGGTGCTGGGCTTCCTGGCCATGT
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40 CGCCTTGGTAGCTTGCTCCTGGTATGGCCATCAGATTGTACAGACTTTTATAACC
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45 GAGTGTCTAGATGCCTGAAAGGGCCTGGGGCTGAGCTCAGCCTGTGGGCAGGGT
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5

SEQ ID NO: 660

>21631 BLOOD 370788.1 AK000072 g7019922 Human cDNA FLJ20065 fis, clone
COL01613, highly similar to ECLC_BOVIN EPITHELIAL CHLORIDE CHANNEL
PROTEIN. 0

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TGTTTTCTCTTAGTTCTGTGCCTGCTGCACCAGTCAAATACTTCCTTCATTAAGC
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15 CCTGAGAATTGGAAGGAAAATCCTCAGTACAAAAGGCCAAAACATGAAAACCAT
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25 CAAAACATAAAGTGCAATTTTAGAAGTACATGGGAGGTGATTAGCAATTCTGAG
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30 CTATTGTAAATAAGCTAATCCAAATAAAAAGCAGTGATGAAAGAAACACACTCA
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40 GGAACAATAATGGAAAATTTACAGTGGATGCAACTTCCAAAATGGCCTATCTC
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45 CAATGTGACTGCTTTTATTGAATCACAGAATGGACATACAGAAGTTTTGGAACCT
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20

SEQ ID NO: 661

>21656 BLOOD INCYTE_547531H1
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 25 AAAGCTTATGGCTCTGTGATGATATTAGTGACCAGCGGAGATGATAAGCTTCTTG
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SEQ ID NO: 662

30 >21660 BLOOD 238908.1 AL137516 g6808175 Human mRNA; cDNA DKFZp564M2178
 (from clone DKFZp564M2178); partial cds. 0
 GAACCACCGGCAGACGCACCTCCGGGGCCACACCCACCAAGGCTCCTGCCCCTGTT
 GTCCTGGGGTCCCCAGTTGTTCTAGGGCCTCCTGTGGGGCCAGGCCCCGAGTGGCTG
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 35 CTGCCGCTGCCACCACCACTGAGGTAGTGACTGAGGTGGAGCTGCTCCTCTACAA
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 AGGTGCAGGCCTCGTCACCTGCAGAGGTGCCTGTGTCTCAGCCTGACCCCTTGCC
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 40 CCGGGGGCGCAGGGCCCCGAGGAACAACAGTGGAGAAGCAGGCGGGGCAGCCA
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5 CACACACAGGAGAGCGGCCCTACCGGTGTGGGGACTGTGGCAAGGCTTTCACGC
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SEQ ID NO: 664

>21683 BLOOD 444662.14 Z58148 g1029379 Human CpG island DNA genomic MseI
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SEQ ID NO: 665

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SEQ ID NO: 666

>21694 BLOOD 029567.1 Incyte Unique

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SEQ ID NO: 667

>21697 BLOOD 350207.6 X69086 g34811 Human mRNA for utrophin. 0

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GCTTACATAAGAATTAGAAGACCACTTTACATTTTACATT CTTCTGCTGTTTCAT
30 ATTAACCTTGACAAATTACTTCATTTTTTCTTTGACTCT TTTTACCACAATGTTTTG
TTATTTATAATTTATCAGCCATATGTTTATCAGCCATATA ACCAACTAGATCCCCAA
ATAGATCCATGTATTTGTTTCCGTGATTTGGCCACATTA AATAAATTCATAAATTTT
AATCAAATATCATATATATACACACATATGGTTTAAGCT ACAGCCCTGTGTATGC
CGTTTAACTTTATTTGACGTTGCCCACTTACTTCTTTGCT GACCACCTGGATAACC
35 GTAATAAAAATCCTATAAGCCTAAATGGCATTCTTTTGG GATATTTTCTGTCAT
TTTATTCCCTTTTATATAAGTAGGAATTAATTATTTATTT ATGTCTTAATCTATT
TGATAAAGAAGACTACATTATAAATAATCTCAAAGATCAT ATTACCAAAGGTTGCC
CACTTGAGCATATTTTCATTTTGACACAGAAACAAAATTT AGTACAACCTTTCTT
AGTTCCCATGTCTTGATTTTCATCATTACATGCACAGCAG ACCTTTACCTATTGTG
40 ATACCAGAACACATCATTGTCTTTGGTTCCCTTCAAAGAG AATTTTATTGTTGTTT
TGTATTTTCAAGTCCTTAATAGTTCTTGAACTCCTAGTTG TTTTCTTGTTGAAAG
CAGACACACATTTAGTGCACGGCTTATTTTACCTTTCGGGT GAAAGATCAGATGT
TTTTATACCCTTCACTTGATCAATATATTTGGAAAGAATG TTTATCAAAGTCTAT
GTCACTGCTTCTACAGAAGAATGAAATTAATGCTTAGGTG ATGGTACCTCCACCT
45 ACATCTTTTTGAGTGCATTCAATTATGTATTTTGGTTTAG CTCTGATTTAACATTT
AATTGATTCAAGTTTAAACATGTTACTTAATTAGCAAATGT AGAGGAACCAAAAAA
AGGTGAAAATAATATGTTTTGATTCAAACCTAAAGACATA AAAACATAAAGACA
TTTTAACTTTGGGTCTCTTTAGCTGGGATCTGGCCAGAAG GAGGCTTAAAGTTA
GAAATTGCTATTATTTTAGAATAGGTTGGGTGGGTGGGGGG CAAGGGTGTCTAT

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5 ATTTGGTGTCTTCCTTGTCTTACTTTAAAAAGTCATGTGTTAATTTTTTTCTGCC
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10 TGTGTAAAAGTCCAATTAGTATGCTTTTCATTTCAAATAATCCATATAGCCTCCAG
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15 GACATCCTCCTGACCTCCTGACCTCCCTGACCTGCTTCACCACTGTGTTACCTCA
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20 TTCTTCCATTTTACATTGCAGGTGTGGCTACCAAGAGCTGGATAACGAGTCCCTC
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25 ACATTTACATTTTTTTAAAAAAGAATCCTTCATGGGAATATATCTTAATAATC
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30 ACTGTTTACAGTATGACTCCAATTATGTAAAAAAGTATACAATACACATATAGG
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35 TTTTGGGAATACATATCACTTTGGTAATAAACTTACATTCCCTGTTTTATACTTGT
TACAACATTTTAAATTAAACAGTTAATATTGTGATTAGAGCATTGTTTGCTTCATGA
CCTAAACAAATACTGGCTTTGAAGTCTAGGTTCTATTTCTAGAAAGATTAAACAT
TAGTATCCTTTTAAATCTTTTTAAGTAAGGCATACTGCATACATACATTACATGCAT
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40 TGGAATTATGGTAGTTTAAAAGCAGTCCATAGTCTCATCCATCACAACATGCTG
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GCACCAAACACACAAAATCTTTTAAAAGTCTAGTTAGTGTAGTCTAAATGGACA
CTCCAGAGTCTGTTCTTGAATTCCATTGCAAGAGCTCCAACCTCCTACTTTCAGAA
45 GGGATGGGGATCAAGATGAGGGTTGTCACATAAGCTAATTTTCAATATATATCAA
GTCTTGTGGGGTCCAGGAACAAATACTGTCATTGGTTAGTGTTAAGTACATGAG
TTGACTTTTCTCCTCTCTCACACCCACCTTGCCCTGGCAATTGGGTAGGGGGAG
GCTGTTTATCCTCCAAGAGAGGACGGCTGGTTCTCATCTCAGTTTCCGTTCTAAA
CCACAGAGTGGTCATTGCTGTGAACTCCAGCCAAGATGGTGTGGGAGAGGCGAG

GAAGCCGAGCGGTCTGAGCCTTCTGTGGGGCCGGTGGGGTTCTCACTGCGCTGGC
AGCAGAGGATCTGCCTAAAGGTGGCGCTCATTTCTTTGTCGCGGTAGGAGTAAAT
GATGGGGTTCATGGCAGAGTTGAATTCAGCAAGGAGAAGGAAGAATTTCTCATA
GGCCAGCACGTCGCACTGTGGACAGCACACGTCTAGAAGTAACAAAACCAATCC
5 AGGAGTCCAGCAGATGATAAAGGCCCCAAGCACAATGACCACAGTCTTCAGAAG
ACTCATCATGGTATCCCGATTCCGCCGGGGTCCAGA ACTATGCCGAGACATTCTC
ATAGTCTCTGGCGAACATAGCCAAAGATGTGAGCATAGAGAACCACCATTACC
ACAAAGGTCACCAAGTTGAAAATGGCCCAGAAGACTAAGTAAGAGTCACTGTAG
AGGGGTGCCATGTTGGAACAATTTTCAATATCACAGATACAGTTCCAGCCCACAC
10 TGGGTATAGCACCATAACGATGGCCATAGTCCAGATGACCACAATGACCACCA
CTACCCGCCGGTTGCTCATCCGTGTGTGGAGCTGCATGCGGAAAACCGTAATGTG
CCTCTCGATTGCAATAGCCAGTAAGTTGGCCACAGATGCCGTCAGGCTGGTGTCA
ATGAGGCCCTGACGAAGGAGCCATGTGCTAACAGTCAGTCTCCGAGTATTGGGT
CCTGTGTTGAACATGAGATAGAAGTAGGCCAACCCAGCAAAGAAGTCTGCAGCA
15 GCCAGATTAGCCATTAGGTAATAAATAGGAAAATGGAAGCGGCGGTTGACATAG
ATTGCCACCATGACCAATAGGTTGGCCAACATGATGAAGATACAAACAGTGATT
CCAAGTCCCATCACCAGCTTGCTGACTGTGTTCCATTCTGTGGCAAGATGCTTTCC
ACTTCGGTTATAAAAGAAGGCAATGGACTCGTTGTAGAAGCACTGTGGTTCATTC
ATGGCTGTGAACTGGGGCTGTGAAATTACAGGGATGGAAGTAGAGATGGCAGCC
20 ATGACAGCTCTGTGGTTGTAGGTGGTGAACACGCCCCAGAACTACGGGAGACAA
ATTTTCTTGTTTGCTGATCAGATCGAAGTCATGCTAGGAGAAGCTGTGTACCTGA
TGGCTGTAGGTGTCAGTCTGAGAAAGTCAGGTACTCAGATAGGTGGATGGGGAGC
TTCATAAATCAGACGTCCACCTCTGTTAGTTCTTTCCCATCACTCACAGGGAGACT
GAGAAATCCATGCTGAGTGCCACAGACCTGGGCAGGAGCTGTTCGCCCAGCGCCG
25 GACAGCTGGCAGGACTCCGGTGGACGCCCGGACGCGGGCATTTCACGTTGTC
GCTCTCTCTTCCCCTTGAAAAGCTCTGGAAAACATCGCGGGGGCCCGCAAAACC
CCGGAAATGTGGC

SEQ ID NO: 668

30 >21707 BLOOD 1147849.1 J03004 g183181 Human guanine nucleotide-binding regulatory
protein (G) alpha-inhibitory-subunit mRNA, complete cds. 5e-78
GCTGCACCGTGAGCGCCGAGGACAAGGCGGCGGCCGAGCGCTCTAAGATGATCG
ACAAGAACCTGCGGGAGGACGGAGAGAAGGCGGCGCGGGAGGTGAAGTTGCTG
CTGTTGGGTGCTGGGGAGTCAGGGAAGAGCACCATCGTNAAGCAGGTTAGGTCA
35 TTNCCGGGGTTGTTATTTCCGGGGGGGATTTCCNCAATACCCNGGGTTNTCTACAG
CAACANCATCCAGTCCATCATGGCCATTGTCAAAGCCATGGGCAACCTGCAGATC
GACTTTGCCGACCCCTCC

SEQ ID NO: 669

40 >25177 BLOOD Hs.227948 gnl[UG]Hs#S553844 squamous cell carcinoma antigen=serine
protease inhibitor [human, mRNA, 1711 nt] /cds=(61,1233) /gb=S66896 /gi=239551
/ug=Hs.227948 /len=1711
CTCTCTGCCACCTCTGCTTCCTCTAGGAACACAGGAGTTCCAGATCACATCGAG
TTCACCATGAATTCAGTGAAGCCAACACCAAGTTCATGTTGACCTGTTCC
45 AACAGTTCAGAAAATCAAAAGAGAACAACATCTTCTATTCCCCTATCAGCATCAC
ATCAGCATTAGGGATGGTCCTCTTAGGAGCCAAAGACAACACTGCACAACAGAT
TAAGAAGGTTCTTCACTTTGATCAAGTCACAGAGAACACCACAGGAAAAGCTGC
AACATATCATGTTGATAGGTGAGGAAATGTTTCATCACCAGTTTCAAAAGCTTCTG
ACTGAATTCAACAAATCCACTGATGCATATGAGCTGAAGATCGCCAACAAGCTCT

TCGGAGAAAAAACGTATCTATTTTTACAGGAATATTTAGATGCCATCAAGAAATT
TTACCAGACCAGTGTGGAATCTGTTGATTTTGCAAATGCTCCAGAAGAAAAGTCGA
AAGAAGATTAACTCCTGGGTGGAAAGTCAAACGAATGAAAAAATTAACCACTA
ATTCCTGAAGGTAATATTGGCAGCAATACCACATTGGTTCCTGTGAACGCAATCT
5 ATTTCAAAGGGCAGTGGGAGAAGAAATTTAATAAAGAAGATACTAAAGAGGAA
AAATTTTGGCCAAACAAGAATACATACAAGTCCATACAGATGATGAGGCAATAC
ACATCTTTTCATTTTGCCTCGCTGGAGGATGTACAGGCCAAGGTCCTGGAAATAC
CATACAAAGGCCAAAGATCTAAGCATGATTGTGTTGCTGCCAAATGAAATCGATG
GTCTCCAGAAGCTTGAAGAGAACTCACTGCTGAGAAATTGATGGAATGGACAA
10 GTTTGCAGAATATGAGAGAGACACGTGTCGATTTACACTTACCTCGGTTCAAAGT
GGAAGAGAGCTATGACCTCAAGGACACGTTGAGAACCATGGGAATGGTGGATAT
CTTCAATGGGGATGCAGACCTCTCAGGCATGACCGGGAGCCGCGGTCTCGTGCTA
TCTGGAGTCCTACACAAGGCCTTTGTGGAGGTTACAGAGGAGGGAGCAGAAGCT
GCAGCTGCCACCGCTGTAGTAGGATTCGGATCATCACCTGCTTCAACTAATGAAG
15 AGTTCATTGTAATCACCTTTCTTCTTCTCATAAGGCCAAAATAAGACCAACAG
CATCCTCTTCTATGGCAGATTCTCATCCCCGTAGATGCAATTAGTCTGTCACTCCA
TTTGGAAAATGTTACCTGCAGATGTTCTGGTAACTGATTGCTGGCAACAACAG
ATTCTCTTGGCTCATATTTCTTTCTTTCTCATCTTGATGATGATCGTCATCATCAA
GAATTTAATGATTAATAATAGCATGCCTTTCTCTCTTTCTCTTAATAAGCCCACATA
20 TAAATGTACTTTTCTTCCAGAAAAATTCTCCTTGAGGAAAAATGTCCAAAATAA
GATGAATCACTTAATACCGTATCTTCTAAATTTGAAATATAATTCTGTTTGTGACC
TGTGTTTAAATGAACCAAACCAAATCATACTTTTCTTTGAATTTAGCAACCTAGA
TAAACACACATTTCTTTGAATTTAGGTGATACCTAAATCCTTCTTATGTTTCTAAAT
TTGTGATTCTATAAAACACATCATCAATAAAATAGTGACATAAAATCAAAAAAA
25 AAAAAAAAAA

SEQ ID NO: 670

yc03e09.s1 Stratagene lung (#937210) Homo sapiens cDNA clone IMAGE:79624 3', mRNA
sequence gi|666284|gb|T62627.1|T62627[666284]

30 TTTAGANACATTTGCTTNCCCATCCCAAATTAAGTATGCAAATTAATTGTTTTGAA
GATGCCATNCCAAATGTGGAGGTGCTCATGAGCTTGGAACTCAGAAGCTCTAA
GGTGAGCCTCCAGACAGGGAGAGTCTGCAACATGGTGACTGAGAGGGTAGTAGA
AATTCATTGCTATNTAACTCTCTCTNGAGATTTATTCTTGGAGGACAGAGCAAA
AGTCCACTCTTCAAGCAGCTCTCCGAGGGTCAATTCCTTCAACAGTATATTCCGTTT
35 CCAGTTCTTTGCGTTCCTTCTCTTTCCTTCGACTTCAAATTCATTTGGTGTAAACCA
AGTTCATCCTCATTCCNGAATGCACTTCACTGAGGATCCCGTGTTTCATTTTCTT
CTTATATAAAANCCCTTTTCGCCTCACCACAGGTCACGGGGGAGCTTNGGAACAGT
GAAAATCCACAGTGTCACTTTTGGGGTTTCTCTTCGGGTGAATATTTTCTGAA
ATCTCCTTTTGTAGCTTGGACAGATATCTTGNTCCTTTGNCT
40

SEQ ID NO: 671

ys88a08.s1 Soares retina N2b5HR Homo sapiens cDNA clone IMAGE:221846 3' similar to
SP:HTLF_HUMAN P32314 HUMAN T-CELL LEUKEMIA VIRUS ENHANCER

FACTOR ;contains MER22 repetitive element ;, mRNA sequence

45 gi|1064703|gb|H84982.1|H84982[1064703]
GCTCCCCAGTGGTCAGCGGAGACCCCAAGGAGGATCACAACCTACAGCAGTGCCA
AGTCCTCCAACGCCCGGAGCACCTCGCCACACAGCGACTCCATCTCCTCCTCCTC
CTCCTCAGCCGACGACCACTATGAGTTTGCCACCAAGGGGAGCCAGGAGGGCAG
CGAGGGCAGCGAGGGGAGCTTCCGGAGCCACGAGAGCCCCAGCGACACGGAAG

AGGACGACAGGAAGNACAGCCAGAAGGAGCCCAAGGATTTTTTNGGGGACAGC
GGGTACGATTNCC

SEQ ID NO: 672

- 5 yq55b04.r1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:199663 5'
similar to SP:SISD_HUMAN P13501 T-CELL SPECIFIC RANTES PROTEIN
PRECURSOR ;, mRNA sequence gi|982328|gb|R96668.1|R96668[982328]
NCGCCCAGGAGTCTCTCGGCCAGCCCTGCCTGCCACCAGGAGGATGAAGGTCTC
CGTGGCTGCCCTCTCCTGCCTCATGCTTGTTGCTGTCCTTGGATCCCAGGCCAGT
10 TCACAAATGATGCAGAGACAGAGTTAATGATGTCAAAGCTTCCACTGGAAAATC
CAGTAGTTCTGAACAGCTTTCACTTTGCTGCTGACTGCTGCACCTCCTACATCTCA
CAAAGCATCCCGTGTTCACTCATGAAAAGTTATTTTGAAACGAGCAGCGAGTGCT
CCAAGCCAGGGTGTTCATATTCCTCACCAAGAAGGGGCGGCAAGTCTGTGCCAAA
CCCAGTGGGTCCGGGAGTTCAGGATTGGCATGGAAAAAGCTTNAAGCCCTAATT
15 CAATATTANTAATTAAGGAGGACANAAGAGGGCCAGCNCACCCACCTCCAACA
CTTCNTGAGGCTTTGGAAGG

SEQ ID NO: 673

- 20 zt20b07.s1 Soares ovary tumor NbHOT Homo sapiens cDNA clone IMAGE:713653 3'
similar to TR:G577291 G577291 MRNA ;contains element MER28 repetitive element ;,
mRNA sequence
gi|1928812|gb|AA284495.1|AA284495[1928812]
CCGCCTCCTTTGCCGGGTACACCTGGCCCAAGAGACCTTCAGCACCTGTGCGA
CTTCTCAAAGATAGACCGGGGCATAGCCTGAAAGCATATTGAAAATGACGAAAA
25 AAGGGAAGACTCTCATGATGTGTGCTCACTGTATCAGGAAGCCCTACTGAGAAGG
AGACAGAGGAAATTACGAGCCTCTGGGAGGGCAGCCTTTTCAATGCCAACTATG
ACGTCCAGAGGTTTATTGTGGGATCAGACCGTGCTATCTTCATGCTTCGCGATGG
GAGCTACGCCTGGGAGATCAAGGACTTTTTTGGTCCGGTCAAGACAGGTGTGCTGAT
GTAACCTCTGGAGGGCCAGGTGTACCCCGGCCAA GGAGGAGGAA

30

SEQ ID NO: 674

>L01639

- CGCATCTGGAGAACCAGCGGTTACCATGGAGGGGATCAGTATATACACTTCAGA
TAACTACACCGAGGAAATGGGCTCAGGGGACTATGACTCCATGAAGGAACCTG
35 TTTCCGTGAAGAAAATGCTAATTTCAATAAAATCTTCCTGCCACCATCTACTCC
ATCATCTTCTTAAGTGGCATTGTGGGCAATGGATTGGTCATCCTGGTCATGGGTT
ACCAGAAGAACTGAGAAGCATGACGGACAAGTACAGGCTGCACCTGTCAAGTGG
CCGACCTCCTCTTTGTACACGCTTCCCTTCTGGGCAGTTGATGCCGTGGCAAACCT
GGTACTTTGGGAACCTTCCTATGCAAGGCAGTCCATGTCATCTACACAGTCAACCT
40 CTACAGCAGTGTCTCATCCTGGCCTTCATCAGTCTGGACCGCTACCTGGCCATC
GTCCACGCCACCAACAGTCAGAGGCCAAGGAAGCTGTTGGCTGAAAAGGTGGTC
TATGTTGGCGTCTGGATCCCTGCCCTCCTGCTGACTATCCCGACTTCATCTTTGC
CAACGTCAGTGAGGCAGATGACAGATATATCTGTGACCGCTTCTACCCCAATGAC
TTGTGGGTGGTTGTGTTCCAGTTTCAGCACATCATGGTTGGCCTTATCCTGCCTGG
45 TATTGTCATCCTGTCTGCTATTGCATTATCATCTCCAAGCTGTCACACTCCAAGG
GCCACCAGAAGCGCAAGGCCCTCAAGACCACAGTCATCCTCATCCTGGCTTTCTT
CGCCTGTTGGCTGCCTTACTACATTGGGATCAGCATCGACTCCTTCATCCTCCTGG
AAATCATCAAGCAAGGGTGTGAGTTTGAGAACACTGTGCACAAGTGGATTTC
TCACCGAGGCCCTAGCTTTCTTCCACTGTTGTCTGAACCCCATCCTCTATGCTTTC

CTTGGAGCCAAATTTAAACCTCTGCCACGCACTCACCTCTGTGAGCAGAG
GGTCCAGCCTCAAGATCCTCTCCAAAGGAAAGCGAGGTGGACATTCTGTTT
CACTGAGTCTGAGTCTTCAAGTTTTCACTCCAGCTAACACAGATGTAAAAGACTT
TTTTTTTATACGATAAATAACTTTTTTTAAAGTTACACATTTTTCAGATATAAAAG
5 ACTGACCAATATTGTACAGTTTTTATTGCTTGTGGATTTTTGTCTTGTGTTTCTTT
AGTTTTTGTG

SEQ ID NO: 675

> Human tumor necrosis factor receptor 2 (TNFR2) gene, exon 10 and complete cds

10 gi|1469539|gb|U52165.1|HSTNFR2S10[1469539]
TCTTGGTCTCGGCTCCTGGCCCAGTGCTCTTTCCCATGTGTCTGAATCTGCATCTT
GGGCAGGGGTCCCTGGGCCCCACTCCTGGACCCCCGGACTGACCCCCACCCCATC
TTGTGCTTAGCAGATTCTTCCCCTGGTGGCCATGGGACCCAGGTCAATGTCACCT
GCATCGTGAACGTCTGTAGCAGCTCTGACCACAGCTCACAGTGCTCCTCCCAAGC
15 CAGCTCCACAATGGGAGACACAGATTCCAGCCCCTCGGAGTCCCCGAAGGACGA
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GAGACCCTGCTGGGGAGCACCGAAGAGAAGCCCCTGCCCTTGGAGTGCCTGAT
GCTGGGATGAAGCCCAGTTAACCAGGCCGGTGTGGGCTGTGTCTAGCCAAGGT
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20 CCACCACTAGGACTCTGAGGCTCTTCTGGGCCAAGTTCCTCTAGTGCCTCCAC
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TTTTCTGCAGAGGGGCTTTCTGGAGAGGAGGGATGCTGCCTGAGTCACCCATGAA
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GTGTAGGGAGGAGGTGGCAGCCCTGTAGGGAACGGGGTCCTTCAAGTTAGCTCA
GGAGGCTTGGAAAGCATCACCTCAGGCCAGGTGCAGTGGCTCACGCCTATGATC
30 CCAGCACTTTGGGAGGCTGAGGCGGGTGGATCACCTGAGGTTAGGAGTTCGAGA
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35 GCACCGCCTCCAAATGCTAACTTGTCTTTTGTACCATGGTGTGAAAGTCAGATG
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40 TGCTGTCTTAGGCCACACCATCTCCTTTCAGGGAATTCAGGAACTAGAGATGAC
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GTCTGCGTCTGTGTTGCGTGTCTGGGTGTGTGTAGCCAAGGTCGGTAAGTTGAA
45 TGGCCTGCCTTGAAGCCACTGAAGCTGGGATTCTCCTCCCATTAGAGTCAGCCTTC
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GAGGATCACTGGAGCCCAGGAGTTTGAGGCTGCAGCGAGCTATGATCGCGCCAC
TACACTCCAGCCTGAGCAACAGAGTGAGACCCTGTCTCTTAAAGAAAAAAAAAAG
5 TCAGACTGCTGGGACTGGCCAGGTTTCTGCCACATTGGACCCACATGAGGACAT
GATGGAGCGCACCTGCCCCCTGGTGGACAGTCCTGGGAGAACCTCAGGCTTCCTT
GGCATCACAGGGCAGAGCCGGGAAGCGATGAATTTGGAGACTCTGTGGGGCCTT
GGTTCCCTTGTGTGTGTGTGTGATCCCAAGACAATGAAAGTTTGCAGTGTATGC
TGGACGGCATTCTGCTTATCAATAAACCTGTTTGTTTTAAAAAAA

10

SEQ ID NO: 676

>R88734

ANNTNANATTCCATTGAAGGTATTATTTATTTGCAGCTCATCTTAAGTGACAAAA
TTCCATACAGAAGACTATAACAGAAATCATATTTAATATATTAAATTAATACTT
15 CAAATATCTTTCACATTANGATGATTATCTATTGTGTAAATCTTTCCTAGGTATGT
GTGTCTGTTTCTTGATGTGTAAACCAAACTCTGAAATATTCTCTTGATCTAACTT
TGACTTTTAAAACTGACATTGTATTGAATTTACATAATTCTCAATCAGAAAAAA
AATTACTGTCAGACTGCAATGCA AGTCTGCCCCAATGAAGGCCG

20 SEQ ID NO: 677

>AA418689

ATGAAAGTTGAATATTTTATTATTTACACATATAAAGTGAGAATGAAAATTGGGCA
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25 TCTTTCGGGCCTTGAGTTCCTTCATGGCAATGAGCAGAGGATCTGTCTCCGCCTCC
AGCTCCACCATCACAGGGGCACACATCGCAATCTGGAGCGCTCGGGTGCCCAGC
ACGCGGGCTCGCTCGTACTTGGTCATGTATGGTGTGGTGATTCTGCTTCTGGTTGG
CCTGCGGTCGCTCCCCAGAGGAGGNAGTCTCGACATTCTCCTGGCCTTCCTCTTC
GGCATTCTCCAAGTCATCTAGCCCTTCATCCTCCTC

30 CACATCATCAGAGTCGTCGCCATCAAA

SEQ ID NO: 678

>AA455281

TTTTTGGAGGAGTGGCATGGAGTTCTTTAATTTGGAAGGCAAAAGGTTACATTTA
35 ATGAAAGGCAGAGGCTGGATTAATAAATGTTTGTTAGAAAGTTGTTCTGACACAC
AGTGAACCTCTGGGCTTTTCTCCTGCATAAAAAGCAGAGCTAGCAGTAAGTGCAA
ATCTGAAGAAAATCCATGTGTCCAATAAGCTGCCATCTCCAGAACTCTTATCCAG
GAAATTCAAAGAGTGAACATTCTTTTAGTCTCCTACTCCTCAATTAAGTAAATGA
GAATGAGTCAGCCAACAAAGTTCATGACAACAAGGTGCAGGATGGTGCTGGCAA
40 AGAGAAAATCAGCAAAGGCTCGCTCTGGGGAGATGCCTTGGAATCCGCTTTGT
TCTGTGGGTTGATCTGTATTCTCAGGCAAACCGCTAGGATGAAACTCCCCACACA
AGAGATGAAGCCCGAGAGAAAAGAGTTGAAGGGGAAGGTCCC

SEQ ID NO: 679

45 >H94469

GCAAAACAACATTTATTCTTTTAAAAAATCTATATACATTGCCATACAAAGATAC
CACATTGAAGCAGTTCTCAGGAACCTTCCAGTGAGCCTTCTCTTATAATTGCCCCG
AGCAAGATTTCTGTGCCAGAGAAAGTCTCAGCATTTCACCTTGGTGTNCTCTATG
TCATCATCCTGGAGCTGCTCGGTATCAGATTCTCCATGCACAGGTCTTCTTGACGT

CAAGTCCTCCAGACACCGCATCAACTCATAAGTCTGTTCTGCTGAGAAAATCACC
TGTTCCTGTTCCAAAAGGGGCAAGGCATCTGTCAGCAGAGTTCATCCCAGAAAGA
CCGAAGGGGCAATCCGAGACGTCATCAAG GACAGAAGGA

5 SEQ ID NO: 680

aa79c05.s1 NCI_CGAP_GCB1 Homo sapiens cDNA clone IMAGE:827144 3' similar to
SW:RLX1_HUMAN P49406 PUTATIVE 60S RIBOSOMAL PROTEIN; mRNA sequence
gi|2261786|gb|AA521243.1|AA521243[2261786]

TTTTTTTTTGGTGTACAAGTTTTATTTTAGAAAAAAGTATTAATAAAACAATGA
10 ATGCTTAGTTCACCTTAATTACTATGTTCTTATAAATGAAATTAATTTGGTCTCAAA
ATATATCCTCTTAGAGCCAATGTATCTTCTGCAACTAACCAAATTCATTCTCAGA
ATCAAGACCTTTTCGACGCTTCAATTTCTTCCATATTGCAGCTTCAATTTTGTAA
GTATCATATTCCTCATCATATCAAATTCAAGCCATGGACTGATTCCACTTCTGAG
CTTCTTTCATTTGCTGTTTCAGTTAAACAAAGATCAAATCTGATTCTTTAATATTA
15 AAATTTGGACGTTCCCAGCGTTTAGACCAGGGCTTAGGCTTCATTTTACTTTTCAG
CTCATTAACAGGAACTTTTTGGTTAGGCTCTTGTACTACTGGCTTCATATTCACAT
CAAAAGTGCTATATTCAGGAAGGGCATCTCGTAAGTATAGCAAGCTATCATCCA
GCCGTTTCTCTAATTTGACCACCTGAATCTCCTGGACCCGAGGATTATAAAGTTC
AAAGCAAATCTCGACACCTTGTCCTTCGATAACATTCCTAAGGAT GAAAGTAGC

20

SEQ ID NO: 681

Human Thy-1 glycoprotein gene, complete cds
gi|339682|gb|M11749:1|HUMTHY1A[339682]

GGATCCAGGACTGAGATCCCGAACCATGAACCTGGCCATCAGGATCGCTCTCCT
25 GCTAACAGGTACCCGGCATGGGGCAGGACTGGGGCTCCAGGCGCCCTGGCTTCC
TTCCCTCCAGAGAAGCAGCTTCTCCCTCACAGTCTCAGAAAAGCGCAGGTGACAA
AGAGAGGGGCTCTTTTTCATCCTGAAGTCAGCCGATCCACCGCGCTGATATTCTGA
CGGCCTGAGGTGGTTTTTGGAAACACAGTTTGCTGAGCCCTCCTTCACACTATTG
AACTAGAATCCCCAACTGAGAACCAGGAACCAGCATCAACTCCCTAAGATCTC
30 CTGTCCTTGAAACACATTGATAGGATCCAAGGCTCAAGCAGAGTGGGGAGGGAG
GCTGGGGTCTGCAAAGGAGAAGTGGGATCCCTGGGGTG421GGGAAAGGCACTC
AGAGAGCAGACCCCGTCCCTCCCTAGCCAGGCCATCTCTCCACTTCAGGTGG
GTGGGAGGCCCTGTGCCGAGGCCCTCCAGTTTGAAGGAGGCACTGCTGGTG
CCAGTCTTGCAAGTCTCCCGAGGGCAGAAGGTGACCAGCCTAACGGCCTGCCTA
35 GTGGACCAGAGCCTTCGTCTGGACTGCCGCCATGAGAATACCAGCAGTTCACCCA
TCCAGTACGAGTTCAGCCTGACCCGTGAGACAAAGAAGCACGTGCTCTTTGGCAC
TGTGGGGGTGCCTGAGCACACATACCGCTCCCGAACCCTTCACCAGCAAATA
CCACATGAAGGTCTCTACTTATCCGCTTCACTAGCAAGGACGAGGGGCACCTAC
ACGTGTGCACTCCACCACTCTGGCCATTCCCCACCCATCTCCTCCCAGAACGTCA
40 CAGTGCTCAGAGGTGAGACAAGCCCCTAACAAGGTCAAGTGAGCTGGGAGAGCC
AGGCTCGGGGACAGCAGGCAGTTCCTTGGCTGGACTAGAGAGGAGAATAGCCC
CATAACGCTCTCACCTCTCCCAACTGCTGCCTGGTCAACTGGGGAACCATTTGCC
TTCGGTGTGAATGGGGTGAAGAGCTCAGGGCCAGACAGGCAGAGCAGTGTGGTT
CCACCAGAACTGTGGGCAAGGCCTTTGGCCCCTAATCTTCCTTCTCCAGCGGGA
45 AACAGGGATGACACCACCTCCCTCAGCCAGTTTTCTTGTCATGATGTTTAGTAAG
GTTTTTCATAAGATGATATGTGTGCAAGAGATCAGTAATCTGCAAATGGGAAAGA
TGGCTGGTTCTGTGAGACCAGGCTGTTCTTGGTCCCAGCTAAGACATTGCAGTAC
CCACCTCCCAAAGGGAGTACACCCTTGCTTTGGGCCTGTGCCTGCCTGAGTCCTG
ATCCGTCTTCCTTCTACCCTGCCCCCGCCCCCTTCTCTTCTGCAGACAACTG

GTCAAGTGTGAGGGCATCAGCCTGCTGGCTCAGAACACCTCGTGGCTGCTGCTGC
 TCCTGCTGTCCCTCTCCCTCCTCCAGGCCACGGATTTTCATGTCCCTGTGACTGGTG
 GGGCCCATGGAGGAGACAGGAAGCCTCAAGTTCCAGTGCAGAGATCCTACTTCT
 CTGAGTCAGCTGACCCCCTCCCCCAATCCCTCAAACCTTGAGGAGAAGTGGGGA
 5 CCCCACCCCTCATCAGGAGTTCCAGTGTGCATGCGATTATCTACCCACGTCCAC
 GCGGCCACCTCACCCCTCTCCGCACACCTCTGGCTGTCTTTTTGTACTTTTTGTTCC
 AGAGCTGCTTCTGTCTGGTTTATTTAGGTTTATCCTTCCTTTTCTTTGAGAGTTTCG
 TGAAGAGGGAAGCCAGGATTGGGGACCTGATGGAGAGTGAGAGCATGTGAGGG
 GTAGTGGGATGGTGGGGTACCAGCCACTGGAGGGGTCATCCTTGCCCATCGGGA
 10 CCAGAAACCTGGGAGAGACTTGGATGAGGAGTGGTTGGGCTGTGCTGGGCCTAG
 CACGGACATGGTCTGTCCTGACAGCACTCCTCGGCAGGCATGGCTGGTGCCTGAA
 GACCCAGATGTGAGGGCACCACCAAGAATTTGTGGCCTACCTTGTGAGGGAGA
 GAACTGAGGATCTCCAGCATTCTCAGCCACAACCAAAAAAAAAAATAAAAGGGCA
 GCCCTCCTTACCACTGTGGAAGTCCCTCAGAGGCCTTGGGGCATGACCCAGTGAA
 15 GATGCAGGTTTGACCAGGAAAGCAGCGCTAGTGGAGGGTTGGAGAAGGAGGTA
 AAGGATGAGGGTTCATCATCCCTCCCTGCCTAAGGAAGCTAAAAGCATGGCCCT
 GCTGCCCTCCCTGCCTCCACCCACAGTGGAGAGGGCTACAAAGGAGGACAAGA
 CCCTCTCAGGCTGTCCCAAGCTCCCAAGAGCTTCCAGAGCTCTGACCCACAGCCT
 CCAAGTCAGGTGGGGTGGAGTCCCAGAGCTGCACAGGGTTTGGCCCAAGTTTCT
 20 AAGGGAGGCACTTCTCCCTCGCCCATCAGTGCCAGCCCTGCTGGCTGGTGCC
 TGAGCCCTCAGACAGCCCTGCCCCGCAGGCCTGCCTTCTCAGGGACTTCTGC
 GGGGCTGAGGCAAGCCATGGAGTGAGACCCAGGAGCCGGACACTTCTCAGGAA
 ATGGCTTTTCCCAACCCCCAGCCCCCAGCCGGTGGTTCTTCTGTTCTGTGACTGT
 GTATAGTGCCACCAACAGCTTATGGCATCTCATTGAGGACAAAGAAACTGCACA
 25 ATAAAACCAAGCCTCTGGAATCTGTCTCGTGTCCACCTGGCCTTCGCTCCTCCA
 GCAGTGCCTGCCTGCCCCCGCTT

SEQ ID NO: 682

yw08h11.s1 Soares melanocyte 2NbHM Homo sapiens cDNA clone IMAGE:251685 3',
 mRNA sequence gi|1110224|gb|H96738.1|H96738[1110224]
 30 TAAAAANAAATCTTTTTTTATTTCAAAGATTGCTTCTTATATTGAAGCTCATATTA
 AAGCAACAGTACAATGTTTATAAAATATAAGTGTGATGCCGTAACATTTTCTTAC
 ATGTCAGAATACTGATATTTATATGTATACTAAATAAGAACTTAAATTTGTAC
 AAATAGATACATTAATAATGACATAGAAATAGGGCGTCTCTCACTGAAACAAGA
 35 CAGTTATATCTGGCACGTATTAGTTTAAGATGAAAGTAGAAGCAAAAAGATTTAC
 AAGAATCAGCAGTAACAAGATTGATGCTCAAGAGACATAATTGTACATTGTATT
 GTACATACATTGTATGGGTTTAAGCTGGCTGGAATATTATATATTTCCAAGTTTAA
 AAAATGGCNCTACCANATAGAGTGGTCCNGAGTTTAAGGCGAAATTACAGCTCA
 GAACTGTTGTCCCTTCNAATTTTGGTGG
 40

SEQ ID NO: 683

Human integral membrane serine protease Seprase mRNA, complete cds
 gi|1924981|gb|U76833.1|HSU76833[1924981]
 45 CCACGCTCTGAAGACAGAATTAGCTAACTTTCAAAAACATCTGGAAAAATGAAG
 ACTTGGGTAAAAATCGTATTTGGAGTTGCCACCTCTGCTGTGCTTGCCTTATTGGT
 GATGTGCATTGTCTTACGCCCTTCAAGAGTTCATAACTCTGAAGAAAATACAATG
 AGAGCACTCACACTGAAGGATAATTTTAAATGGAACATTTTCTTATAAAACATTTT
 TTCCAAACTGGATTTTCAGGACAAGAATATCTTCATCAATCTGCAGATAACAATAT
 AGTACTTTATAATATTGAAACAGGGCAATCATATACCATTTTGAGTAATAGAACC

ATGAAAAGTGTGAATGCTTCAAATTACGGCTTATCACCTGATCGGCAATTTGTAT
ATCTAGAAAAGTGATTATTCAAAGCTTTGGAGATACTCTTACACAGCAACATATTA
CATCTATGACCTTAGCAATGGAGAATTTGTAAGAGGAAATGAGCTTCCTCGTCCA
ATTCAGTATTTATGCTGGTCGCCTGTTGGGAGTAAATTAGCATATGTCTATCAAA
5 ACAATATCTATTTGAAACAAAGACCAGGAGATCCACCTTTTCAAATAACATTTAA
TGGAAGAGAAAATAAAATATTTAATGGAATCCCAGACTGGGTTTATGAAGAGGA
AATGCTTGCTACAAAATATGCTCTCTGGTGGTCTCCTAATGGAAAATTTTGGCA
TATGCGGAATTTAATGATACGGATATACCAGTTATTGCCTATTCTATTATGGCG
ATGAACAATATCCTAGAACAATAAATATTCCATACCCAAAGGCTGGAGCTAAGA
10 ATCCCGTTGTTTCGGATATTTATTATCGATACCCTTACCCTGCGTATGTAGGTCCC
CAGGAAGTGCCTGTTCCAGCAATGATAGCCTCAAGTGATTATTATTTAGTTGGC
TCACGTGGGTTACTGATGAACGAGTATGTTTGCAGTGGCTAAAAAGAGTCCAGA
ATGTTTCGGTCCTGTCTATATGTGACTTCAGGGAAGACTGGCAGACATGGGATTG
TCCAAAGACCCAGGAGCATATAGAAGAAAGCAGAACTGGATGGGCTGGTGGATT
15 CTTTGTTC AACACCAGTTTTTCAGCTATGATGCCATTTCTGACTACAAAATATTTA
GTGACAAGGATGGCTACAAACATATTCATATATCAAAGACACTGTGGAAAATG
CTATTCAAATTACAAGTGGCAAGTGGGAGGCCATAAATATATTCAGAGTAACAC
AGGATTCAGTGTTCATTCTAGCAATGAATTTGAAGAATACCCTGGAAGAAGAAA
CATCTACAGAATTAGCATTGGAAGCTATCCTCCAAGCAAGAAGTGTGTTACTTGC
20 CATCTAAGGAAAGAAAGGTGCCAATATTACACAGCAAGTTTCAGCGACTACGCC
AAGTACTATGCACTTGTCTGCTACGGCCCAGGCATCCCCATTTCCACCCTTCATG
ATGGACGCACTGATCAAGAAATTTAAATCCTGGAAGAAAACAAGGAATTGGAAA
ATGCTTTGAAAATATCCAGCTGCCTAAAGAGGAAATTAAGAAACTTGAAAGTAG
ATGAAATTACTTTATGGTACAAGATGATTCTTCCTCCTCAATTTGACAGATCAAA
25 GAAGTATCCCTTGCTAATTCAAGTGTATGGTGGTCECTGCAGTCAGAGTGTAAGG
TCTGTATTTGCTGTTAATTGGATATCTTATCTTGCAAGTAAGGAAGGGATGGTCA
TTGCCTTGGTGGATGGTTCGAGGAACAGCTTTCCAAGGTGACAACTCCTCTATGC
AGTGTATCGAAAGCTGGGTGTTTATGAAGTTGAAGACCAGATTACAGCTGTCAG
AAAATTCATAGAAATGGGTTTCATTGATGAAAAAAGAATAGCCATATGGGGCTG
30 GTCCTATGGAGGATACGTTTCATCACTGGCCCTTGTCATCTGGAAGTGGTCTTTTCA
AATGTGGTATAGCAGTGGCTCCAGTCTCCAGCTGGGAATATTACGCGTCTGTCTA
CACAGAGAGATTTCATGGGTCTCCCAACAAAGGATGATAATCTTGAGCACTATAA
GAATTCAACTGTGATGGCAAGAGCAGAATATTTAGAAATGTAGACTATCTTCTC
ATCCACGGAACAGCAGATGATAATGTGCACTTTTCAGAACTCAGCACAGATTGCT
35 AAAGCTCTGGTTAATGCACAAGTGGATTTCCAGGCAATGTGGTACTCTGACCAGA
ACCACGGCTTATCCGGCCTGTCCACGAACCACTTATACACCCACATGACCCACTT
CCTAAAGCAGTGTTTCTCTTTGTGCACTAAAAACGATGCAGATGCAAGCCTGTA
TCAGAATCTGA

40 SEQ ID NO: 684

zw83d07.s1 Soares_testis_NHT Homo sapiens cDNA clone IMAGE:782797 3', mRNA
sequence gi|2161864|gb|AA448194.1|AA448194[2161864]

TTTTTTTTTAAAAAAAATTAATATTTTTTATTATATACTTTTAAACATATAGAAGA
TAGAAAAAACAGTACAATGAACAGCCATGTCCACCAGTTAGATTCTGTAACAT
45 TTTGCCACATACGCCTCACATACATTTTGTAAACCATTTGAAACATTTTAAGACA
CTCTAACACTTCATTCTAAATGCTTAAGTATGCAAATTAAGACAGTCTTTTATAA
ACTACAACACCCTTCTCACAGCTCATAAAATTACCAATAATTATCCAATATCATT
CAAAATCTAATCCACATTCAAATTTTCTCAACTGCCTCACCACCGTGCTGGCCTCC

CACCCCCACCTCAGTCTTTTACAGATGGTTTTTCAAATAGAGTCCAGTAAAATA
TTTCACATTGCATTGGTTATTACATAACTTT TAATCAAGAAGAGTTAC

SEQ ID NO: 685

5 Human gene for preproenkephalin gi|31150|emb|V00509.1|HSENK1[31150]
CCGACCCCTCCCGCGAAGGCGTCGGCGCGGGGCTGGCGTAGGGCCTGCGTCAGC
TGCAGCCCGCGGCGATTGGGGCGCGCGCGCCTCCTTCGGTTTGGGGCTAATTAT
AAAGTGGCTCCAGCAGCCGTTAAGCCCCGGGACGGCGAGGCAGGCGCTCAGAGC
CCCGCAGCCTGGCCCGTGACCCCGCAGAGACGCTGAGGACCGCGACGGTGAGGC
10 CCTACGTCCGCCAGCACACCCGGGCCCCGCTTCTCCCCGACGCCCGCCCTCCTCAC
ACTTGCTTCTTCTTCCCTCTAGAGTCGTGTCTGAACCCGGCTTTTCCAATTGG
CCTGCTCCATCCGAACAGCGTCAACGTGAGTGAATTTGCCCGAAGCTTGTCTTTG
CTGAGCGGGTTTGGGGACGTCTGCCCGCCCTCTTCCCTTCACATTTCAATTGCATG
GGTTCCCCAACAGCGTTCCCTGGTTCTTCTTTGTGACCCCAAGTCAATGTCTGCCT
15 CCCCCGGCTCCCGCTCTCTCGCCCCCTGGTCTGCGGCGTTCTCTCCGGAATCTTGCC
CTGGGCGCGGACGCCCAGGAAAAGAGCCGGGTGCCCCAGGCAGCCTCGCGTTG
GGGGCGACCGCGCCATCCCGGGAACCGCGAGGCGATCTGAGTCGCTCCACGTC
TACCTAAAAGCTGTGCGCCGGGAGGGCGGGGCCCCAGAAAGGAGCATTCTGCG
GGCTTTTGCTCGACGATCCCCTGCTGAGGCTGTGCGGCGAGGGTCTGCCGAGG
20 GACCCCGTTCTGCGCCCAGGCAGGCTCGAAGCACGCGTCCCTCTCTCTCGCAGT
CCATGGCGCGGTTCTGACACTTTGCACTTGGCTGCTGTTGCTCGGCCCCGGGT
CCCTGGCGACCGTGCGGGGCCGAATGCAGCCAGGATTGCGCGACGTGCAGTACCG
CCTAGTGCGCCCGGCCGACATCAACTTCCTGGTGAGTGTGCGCGCGGGGAGTGT
TGCGCACCTTGTGAGACAGAGTTTCGG

SEQ ID NO: 686

yi26g12.s1 Soares placenta Nb2HP Homo sapiens cDNA clone IMAGE:140422 3', mRNA
sequence gi|838397|gb|R65759.1|R65759[838397]

30 AAAATTTTTNTACCGTATTTATTGGTTCAAAAAGTCTAGTATTTATAGTTTCAGGCA
GATTTCAACCAAAGAGTCACCAAATTAATAACACAGGGTAGCTTGTGAGGCATA
GACACAGCCCATGTGTTTTCTCTACATTGTATATTCATTTCTCTTTGGCGATTTG
ACATTATAGCCATTCTCTGGAAGTCCTAAAGCAAAGTCTAGTATTTTATGTGCCATA
TTAAGTTAAAATTTCTTATGTGAGGATAACCACTAATACTGGGTTTGTATTTAGGG
CCATCCTTCTTGCCGGGGGGTATGGACAATGGGGGGCTTGTTCTATGGATTAAG
35 GNCCCTACCCCTGGGGCCAGGTGNTATGGGGGNATTGTTAAAACCATGGCCATT
ATTATGGTGGGGGGCCAACCCCCACCCNTGGAAG GGA

SEQ ID NO: 687

>R91550

40 GGAGGATGTGGGCCACGCAGGGCTGGCGGTGGCGCTGGCTCTGAGCGTGCTGCC
GGGCACCGGGCGCTGCGGCCGGGCGACTGCGAAGTTTGTATTTCTTATCTGGGAA
GATTTTACCAGGACCTCAAAGACAGAGATGTACATTCTCACCAGCCACTATTGA
AAACGAACTTATAAAGTTCTGCCGGGAAGCAAGAGGCAAAGAGAATCGGTTGTG
CTACTATATCGGGGCCACAGATGATGCAGCCACCAAAATCATCAATGAGGTATC
45 AAAGCCTCTGGCCCCACCACATCCCTGTGGGAGAAGATCTGTGAGAAGCTTAAG
GAAGAAGGACAGCCAGATATGTGAGCTTAAGTAT GGACAAGCAGATCC

SEQ ID NO: 688

>M94054

GGGCGTGATTTGAGCCCCGTTTTTATTTTCTGTGAGCCACGTCCTCCTCGAGGGG
GTCAATCTGGCCAAAAGGAGTGATGCGCTTCGCCTGGACCGTGCTCCTGCTCGGG
CCTTTGCAGCTCTGCGCGCTAGTGCACTGCGCCCCTCCCGCCGCCGGCCAACAGC
AGCCCCCGCGGAGCCGCCGGCGGCTCCGGGCGCCTGGCGCCAGCAGATCCAAT
5 GGGAGAACAAACGGGCAGGTGTTCACTTGTGAGCCTGGGCTCACAGTACCAGC
CTCAGCGCCGCCGGGACCCGGGCGCCGCCGTCCCTGGTGCAGCCAACGCCTCCG
CCCAGCAGCCCCGCACTCCGATCCTGCTGATCCGCGACAACCGCACCCGCCGGCG
GCGAACGCGGACGGCCGGCTCATCTGGAGTCAACCGCTGGCCGCCCCAGGCCAC
CGCCCGTCACTGGTTCCAAGCTGGCTACTCGACATCTAGAGCCCGCGAACGTGGC
10 GCCTCGCGCGCGGAGAACCAGACAGCGCCGGGAGAAGTTCCTGCGCTCAGTAAC
CTGCGGCCGCCAGCCGCGTGGACGGCATGGTGGGCGACGACCCTTACAACCCC
TACAAGTACTCTGACGACAACCTTATTACAATACTACTACGATACTTATGAAAGGC
CCAGACCTGGGGGCAGGTACCGGCCCGGATACGGCACTGGCTACTTCCAGTACG
GTCTCCCAGACCTGGTGGCCGACCCCTACTACATCCAGGCGTCCACGTACGTGCA
15 GAAGATGTCCATGTACAACCTGAGATGCGCGGCGGAGGAAAACCTGTCTGGCCAG
TACAGCATACAGGGCAGATGTCAGAGATTATGATCACAGGGTGCTGCTCAGATTT
CCCCAAAGAGTGAAAAACCAAGGGACATCAGATTTCTTACCCAGCCGACCAAGA
TATTCCTGGGAATGGCACAGTTGTTCATCAACATTACCACAGTATGGATGAGTTTA
GCCACTATGACCTGCTTGATGCCAACACCCAGAGGAGAGTGGCTGAAGGCCACA
20 AAGCAAGTTTCTGTCTTGAAGACACATCCTGTGACTATGGCTACCACAGGCGATT
TGCATGTACTGCACACACAGGGATTGAGTCCTGGCTGTTATGATACCTATGGT
GCGAGACATAGACTGCCAGTGGATTGATATTACAGATGTAAAACCTGGAAACTAT
ATCCTAAAGGTCAGTGTAACCCAGCTAGCTGGTTCCTGAATCTGACTATAGCA
ACAATGTTGTGCGCTGTGACATTCGCTACACAGGACATCATGCGTATGGCTCAGG
25 CTGCACAATTTACCGTATTAGAAGGCAAAGCAAAACCTCCCAATGGATAAATCA
GTGCCTGGTGTCTGAAGTGGGAAAAAATAGACTAACTTCAGTAGGATTTATGTA
TTTTGAAAAAGAGAACAGAAAACAACAAAAGAATTTTGTGTTGGACTGTTTTCAA
TAACAAAGCACATAACTGGATTTTGAACGCTTAAGTCAATCATTACTTGGAAATT
TNTAATGTTTATTATTTACATCAACTTTGTGAATTAACACAGTGTTTCAATTCTGT
30 AATTCATATTTGACTCTTT

SEQ ID NO: 689

Human mRNA for beta-actin, gi|28251|emb|X00351.1|HSAC07[28251]

TTGCCGATCCGCCGCCCGTCCACACCCGCCGCGCAGCTCACCATGGATGATGATAT
35 CGCCGCGCTCGTCGTCGACAACGGCTCCGGCATGTGCAAGGCCGGCTTCGCGGG
CGACGATGCCCCCGGGCCGTCTTCCCTCCATCGTGGGGCGCCCCAGGCACCAG
GGCGTGATGGTGGGCATGGGTGAGAAGGATTCTATGTGGGCGACGAGGCCAG
AGCAAGAGAGGCATCCTCACCTGAAGTACCCATCGAGCACGGCATCGTCACC
AACTGGGACGACATGGAGAAAATCTGGCACACACCTTCTACAATGAGCTGCGT
40 GTGGCTCCCGAGGAGCACCCCGTGTGCTGACCGAGGCCCCCTGAACCCCAAG
GCCAACCGCGAGAAGATGACCCAGATCATGTTTGAGACCTTCAACACCCAGCC
ATGTACGTTGCTATCCAGGCTGTGCTATCCCTGTACGCCTCTGGCCGTACCACTG
GCATCGTGATGGACTCCGGTGACGGGGTCAACCACTGTGCCCATCTACGAGG
GGTATGCCCTCCCCCATGCCATCCTGCGTCTGGACCTGGCTGGCCGGGACCTGAC
45 TGACTACCTCATGAAGATCCTACCGAGCGCGGCTACAGCTTCAACACCACGGCC
GAGCGGGAAATCGTGCGTGACATTAAGGAGAAGCTGTGCTACGTCGCCCTGGAC
TTCGAGCAAGAGATGGCCACGGCTGCTTCCAGCTCCTCCCTGGAGAAGAGCTAC
GAGCTGCCTGACGGCCAGGTCATACCATTGGCAATGAGCGGTTCCGCTGCCCTG
AGGCACTCTTCCAGCCTTCTTCCCTGGGCATGGAGTCCTGTGGCATCCACGAAAC

TACCTTCAACTCCATCATGAAGTGTGACGTGGACATCCGCAAAGACCTGTACGCC
AACACAGTGCTGTCTGGCGGCACCACCATGTACCCTGGCATTGCCGACAGGATGC
AGAAGGAGATCACTGCCCTGGCACCCAGCACAAATGAAGATCAAGATCATTGCTC
CTCCTGAGCGCAAGTACTCCGTGTGGATCGGCGGCTCCATCCTGGCCTCGCTGTC
5 CACCTTCCAGCAGATGTGGATCAGCAAGCAGGAGTATGACGAGTCCGGCCCCCTC
CATCGTCCACCGCAAATGCTTCTAGGCGGACTATGACTTAGTTGCGTTACACCCT
TTCTTGACAAAACCTAACTTGCGCAGAAAACAAGATGAGATTGGCATGGCTTTAT
TTGTTTTTTTTTGTGTTTTGTTTTGTTTTTTTTTTTTTTTTTTGGCTTGACTCAGGATTTAA
AAACTGGAACGGTGAAGGTGACAGCAGTCGGTTGGAGCGAGCATCCCCCAAAGT
10 TCACAATGTGGCCGAGGACTTTGATTGCACATTGTTGTTTTTTTAATAGTCATTCC
AAATATGAGATGCATTGTTACAGGAAGTCCCTTGCCATCCTAAAAGCCACCCAC
TTCTCTCTAAGGAGAATGGCCAGTCCTCTCCCAAGTCCACACAGGGGAGGTGAT
AGCATTGCTTTCGTGTAAATTATGTAATGCAAAATTTTTTTAATCTTCGCCTTAAT
ACTTTTTTATTTTTGTTTTATTTTTGAATGATGAGCCTTCGTGCCCCCCTTCCCCCTT
15 TTTGTCCCCCAACTTGAGATGTATGAAGGCTTTTGGTCTCCCTGGGAGTGGGTGG
AGGCAGCCAGGGCTTACCTGTACACTGACTTGAGACCAGTTGAATAAAAAGTGCA
CACCTTA

SEQ ID NO: 690

20 >AA435938

TTTCATGCTCATTGCTGTTTATTGAAACAAAAGAATCAGAAGAAGATCAGAATGA
AGACAATAATAAAAAGCAGAAAGCAGAAAGTACAAGAAGAATAAAGAAAAGAAAGG
GAAAGAATTGTAGGAAGGAAAAACTTGTAGAAGTAGAGGGTGGAGAGTGCGAA
GAGGTGGAGTATGATGGGCAGTCCGATCTTTTCCATCTGGGCTTTCAGACAATGG
25 GATATGTCATGGAAGGCTTCTTTAAACACCAGAAGAAATTCAGGATAAAGCTCA
AAAAGAGCAGGCAATCGATAGGGGTTGAAAATCCACTCAGTAGGCCACGGAAG
GACTTCAAGAAGGTTGATCGTTCTGTCTGCTGGATGTTGTAGGTGTCCTACGTGAA
GGCAATCGACATCTGGATGGCTGTGTGTCTGCTCTTTGTGTT
CGCTGCCTTGCTGGAG

30

SEQ ID NO: 691

>AA443497

TCCAAGGTCATGGCAAAACATCTGAAGTTCATCGCCAGGACTGTGATGGTACAG
GAAGGGAACGTGGAAAGCGCATACAGGACCTTAAACAGAATCCTCACTATGGAT
35 GGGCTCATTGAGGACATTAAGCATCGGCGGTATTATGAGAAGCCATGCCGCCGC
GACAGAGGGAAAGCTATGAAAGGTGCCGGCGGATCTACAACATGGAAATGGCTC
GCAAGATCAACTTCTTGATGCGAAAGAATCGGGCAGATCCGTGGCAGGGCTGCT
GAGGCCTGTGGGTGGGACACCAGTGCAGAAACCCTCATCCAGTTTTCTCTCCATCT
CTTTTCTTTGTACAATCCCATTTCCTATTACCATTCTCTGCAATAAACTCAAATCA
40 CATGTCTGC

SEQ ID NO: 692

zfl7e01.s1 Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone IMAGE:377208 3',
mRNA sequence gi|1547536|gb|AA055198.1|AA055198[1547536]

45 CACCTTAAAAACTAGGTTTCTATTTCTGGTTAGATTCTAGAGCAGTGGAAGTCAAG
GAGTGATACTATAACCCTACCCAGTCCCACCACAGCCTGCCTCCTTCTCCACAG
AGATAACATTGTACAAAACCTGTATTTACAAGAAAACCAATTAATAAATTAAGGGT
GTGTGCAAAAGTAGACAGGAGAGTCAAGACATATCAATGCAGGGATGGCTTTGG
GGAATGGGGGACTCAAGGTTCTACACTGGAACCTGGGG

SEQ ID NO: 693

zt87h10.s1 Soares_testis_NHT Homo sapiens cDNA clone IMAGE:729379 3', mRNA sequence

5 gi|2140847|gb|AA435933.1|AA435933[2140847]
TTTTGGTTCAAACAATGGAACATTTTATTATATCATATTACAAAGAGTCAGTGAT
GGGCC
ATTCCAGGATTGGTTAATTCAGTAGTTCACCAAAGTCATCAAGGATCCGTCTTTC
CATCTCCCTTCTCTGCCACCCTCAAGGTTTAAGACGGCTGTTGCAGTTCAGACAT
10 TATATCAAGATGCAGTATTCACAGAAAGAGGACTGTTTCATTTCTTTACCAGAAGA
TTCTCCCATATATCATGTGTCTACATCTAAACCAATCACTACTAAGGGGAAATTG
ACCTACAACATTTGGATTAGACTAATCAAATTTACCTTCTGAGTTAGGCATAGAG
TCAACTTCTATGAGCACATGGCTGAGCCAAGGATAAGCATTCTGCCAGCAAGAG
AGGACATAATATGGGTGTGGGATTGGAGATGGGAGAG

15
SEQ ID NO: 694

yo27c07.s1 Soares adult brain N2b5HB55Y Homo sapiens cDNA clone IMAGE:179148 3', mRNA sequence gi|989944|gb|H50103.1|H50103[989944]

20 AAATTTATCAATGACAAACAGACATAAACTCAAAGTTTGGCTCTTCTGAGGGGC
AGGAGAAAACTGGTGATGTTCTTTTATACAGATGAAACATGGGTNCAGAAATT
ACACGNCACCTTCTAAAGCAACCAGAAGAGGGACACGAAAGCAAACCTGTACATT
CACTAGGANTTTGCAGTCATTTTCAGATTTCCACTAGGTAAGAAAAATACANTTTTG
CGTTAGTTTTCNCCGTGCTCGGGTGFATGAAAAAAAANCCAGCCGACATGCAG
CAACGTCTCCAGCGCTTAGGNCCGTAAANTGTTTETAAGCACAGAAGTACATGT
25 GGGAAGATTTCTCTCATCATTTTTTNGTAAANCAAAGCGTTCTAATATTTTACAGA
CCAAGTTAGGGCCAGTTTTTTNTTTTCCCT

SEQ ID NO: 695

za29f01.r1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:293977 5', mRNA sequence gi|1267964|gb|N95657.1|N95657[1267964]

30 GCAGAAGCGAACAACCTGAGCTTTCCTTGGAGCCCCTGAGCAGGGAGAGGGCT
CACAAGCTTGAGGCCATCTCTCGCCTCTGCGAGNACNAAGTACAAGGACCTAAG
AAGATCCGCGAGAAGCGCTCAGCCAGTGCAGACAACCTGACTCTGCCCCGGTGG
TCCCCAGCCATCATCTCTTAACCTACGGAGGCCCGCCGGACCACACCATCCCTTAG
35 TTTCTCCTTTAGTTTGAGAAAAGACAGACTTGGGGTNGGTTTGTGTTTTGTTTTTC
TTTCCTTTTCTTTTTTTACGCATAGCTCCCGTCAAAGCTGCCT

SEQ ID NO: 696

Human lysophosphatidic acid receptor homolog mRNA, complete cds

40 gi|1857424|gb|U80811.1|HSU80811[1857424]
TCACCACCTACAACCACAGAGCTGTCATGGCTGCCATCTCTACTTCCATCCCTGT
AATTTACAGCCCCAGTTCACAGCCATGAATGAACCACAGTGCTTCTACAACGAG
TCCATTGCCTTCTTTTATAACCGAAGTGGAAGCATCTTGCCACAGAATGGAACA
CAGTCAGCAAGCTGGTGATGGGACTTGGAATCACTGTTTGTATCTTCATCATGTT
45 GGCCAACCTATTGGTCATGGTGGCAATCTATGTCAACCGCCGCTTCCATTTTCCTA
TTTATTACCTAATGGCTAATCTGGCTGCTGCAGACTTCTTGCTGGGTTGGCCTAC
TTCTATCTCATGTTCAACACAGGACCCAATACTCGGAGACTGACTGTTAGCACAT
GGCTCCTGCGTCAGGGCCTCATTGACACCAGCCTGACGGCATCTGTGGCCAACCT
ACTGGCTATTGCAATCGAGAGGCACATTACGGTTTTCCGCATGCAGCTCCACACA

CGGATGAGCAACCGGCGGGTAGTGGTGGTCATTGTGGTCATCTGGACTATGGCC
 ATCGTTATGGGTGCTATACCCAGTGTGGGCTGGAAGTGTATCTGTGATATTGAAA
 ATTGTTCCAACATGGCACCCCTCTACAGTGACTCTTACTTAGTCTTCTGGGCCATT
 TTCAACTTGGTGACCTTTGTGGTAATGGTGGTCTCTATGCTCACATCTTTGGCTA
 5 TGTCGCCAGAGGACTATGAGAATGTCTCGGCATAGTTCTGGACCCCGGCGGAAT
 CGGGATACCATGATGAGTCTTCTGAAGACTGTGGTCATTGTGCTTGGGGCCTTTA
 TCATCTGCTGGACTCCTGGATTGGTTTTGTACTTCTAGACGTGTGCTGTCCACAG
 TGCGACGTGCTGGCCTATGAGAAATTCTTCCTTCTCCTTGCTGAATTCAACTCTGC
 CATGAACCCCATCATTTACTCCTACCGCGACAAAGAAATGAGCGCCACCTTTAGG
 10 CAGATCCTCTGCTGCCAGCGCAGTGAGAACCCACCGGCCCCACAGAAAGCTCA
 GACCGCTCGGCTTCCCTCCCTCAACCACACCATCTTGGCTGGAGTTCACAGCAATG
 ACCACTCTGTGGTTTAGAACGGAACTGAGATGAGGAACCAGCCGCTCCTCTCTTG
 GAGGATAAACAGCCTCCCCCTACCCAATTGCCAGGGCAAGGTGGGGTGTGAGAG
 AGGAGAAAAGTCAACTCATGTACTTAAACACTAACCAATGACAGTATTTGTTTCT
 15 GGACCCCAAGACTTGATATATATTGAAAATTAGCTTATGTGACAACCTCATC
 TTGATCCCCATCCCTTCTGAAAGTAGGAAGTTGGAGCTCTTGCAATGGAATTCAA
 GAACAGACTCTGGAGTGTCCATTTAGACTACACTAACTAGACTTTTAAAAGATTT
 TGTGTGGTTTGGTGCAAGTCAGAATAAATTCTGGCTAGTTGAATCCACAACCTCA
 TTTATATACAGGCTTCCCTTTTTTATTTTTTAAAGGATACGTTTCACTTAATAAACA
 20 CGTTTATGCCTATCAGCAAAAAAAAAAAAAAAAAA

SEQ ID NO: 697
 zfl6g09.r1 Soares fetal heart NbHH19W Homo sapiens cDNA clone IMAGE:377152-5
 similar to SW:NUYM_BOVIN:Q02375 NADH-UBIQUINONE OXIDOREDUCTASE 18
 25 KD SUBUNIT PRECURSOR ;, mRNA sequence

gi|1547458|gb|AA055101.1|AA055101[1547458]
 GCAGCAAGATGGCGGCGGTCTCAATGTCAGTGGTACTGAGGCAGACGTTGTGGC
 GGAGAAGGGCAGTGGCTGTAGCTGCCCTTCCGTTTCCAGGGTCCGACCAGGTC
 GTTGAGGACTTCCACATGGAGATTGGCACAGGACCAGACTCAAGACACACAAC
 30 CATAACAGTTGATGAAAAATTGGATATCACTACTTTAACTGGCGTTCCAGAAGAG
 CATATAAAACTAGAAAAGTCAGGATCTTTGTTTCTGCTCGCAATAACATGCAGT
 CTGGAGTAAACAACACAAAGAAATGGAAGATGGAGTTTGANTACCAGGGAGCG
 ATGGGAAAATCCTTTGATGGGTTNGGCATCAACCGGCTTGATCCCCTTTTGCNA
 CATGGGTTCTAAAC

35
 SEQ ID NO: 698
 Human interleukin 11 mRNA, complete cds gi|186272|gb|M57765.1|HUMIL11[186272]
 GCTCAGGGCACATGCCTCCCCTCCCCAGGCCGCGGCCAGCTGACCTCGGGGCT
 CCCCCGCGAGCGGACAGGGAAGGGTTAAAGGCCCGGCTCCCTGCCCCCTGCC
 40 CTGGGGAACCCCTGGCCCTGTGGGGACATGAACTGTGTTTGCCGCCTGGTCTGG
 TCGTGCTGAGCCTGTGGCCAGATACAGCTGTCGCCCCCTGGGCCACCACTGGCCC
 CCCTCGAGTTTCCCCAGACCCTCGGGCCGAGCTGGACAGCACCGTGCTCCTGACC
 CGCTCTCTCCTGGCGGACACGCGGCAGCTGGCTGCACAGCTGAGGGACAAATTC
 CCAGCTGACGGGGACCACAACCTGGATTCCCTGCCACCCTGGCCATGAGTGCG
 45 GGGGCACTGGGAGCTCTACAGCTCCCAGGTGTGCTGACAAGGCTGCGAGCGGAC
 CTACTGTCTACCTGCGGCACGTGCAGTGGCTGCGCCGGGAGGTGGCTCTTCCC
 TGAAGACCCTGGAGCCCGAGCTGGGCACCCTGCAGGCCCGACTGGACCGGCTGC
 TGCGCCGGCTGCAGCTCCTGATGTCCCGCCTGGCCCTGCCCCAGCCACCCCGGA
 CCGCCGCGCGCCCCCGCTGGCGCCCCCTCCTCAGCCTGGGGGGGCATCAGGGCC

GCCCACGCCATCCTGGGGGGGCTGCACCTGACACTTGACTGGGCCGTGAGGGGA
 CTGCTGCTGCTGAAGACTCGGCTGTGACCCGGGGCCCAAAGCCACCACCGTCCTT
 CCAAAGCCAGATCTTATTTATTTATTTATTTTCAGTACTGGGGGCGAAACAGCCAG
 GTGATCCCCCGCCATTATCTCCCCCTAGTTAGAGACAGTCCTTCCGTGAGGCCT
 5 GGGGGACATCTGTGCCTTATTTATACTTATTTATTTTCAGGAGCAGGGGTGGGAGG
 CAGGTGGACTCCTGGGTCCCCGAGGAGGAGGGGACTGGGGTCCCGGATTCTTGG
 GTCTCCAAGAAGTCTGTCCACAGACTTCTGCCCTGGCTCTTCCCCATCTAGGCCTG
 GGCAGGAACATATATTATTTATTTAAGCAATTACTTTTCATGTTGGGGTGGGGAC
 GGAGGGGAAAGGGAAGCCTGGGTTTTTGTACAAAAATGTGAGAAACCTTTGTGA
 10 GACAGAGAACAGGGAATTAAATGTGTCATACATATCC

SEQ ID NO: 699

Homo sapiens mRNA for GABA-BR1a (hGB1a) receptor

gi|2826760|emb|Y11044.1|HSGTHLA1[2826760]

15 ATGCTGCTGCTGCTGCTGGCGCCACTCTTCCTCCGCCCCCGGGCGCGGGCGGGG
 CGCAGACCCCCAACGCCACCTCAGAAGGTTGCCAGATCATACACCCGCCCTGGG
 AAGGGGGCATCAGGTACCGGGGCTGACTCGGGACCAGGTGAAGGCTATCAACT
 TCCTGCCAGTGGACTATGAGATTGAGTATGTGTGCCGGGGGGAGCGCGAGGTGG
 TGGGGCCCAAGGTCCGCAAGTGCTGCCAACGGCTCCTGGACAGATATGGACA
 20 CACCCAGCCGCTGTGTCCGAATCTGCTCCAAGTCTTATTTGACCCTGGAAAATGG
 GAAGGTTTCTCTGACGGGTGGGGACCTCCCAGCTCTGGACGGAGCCCGGGTGA
 TTTCCGGTGTGACCCCGACTTCCATCTGGTGGGCAGCTCCCGGAGCATCTGTAGT
 CAGGGCCAGTGGAGCAGCCCCAAGCCCCAGTGGCAGGTGAATCGAACGCCACAC
 TCAGAACGGCGCGCAGTGTACATCGGGGGCACTGTTTCCCATGAGCGGGGGCTGG
 25 CCAGGGGGCCAGGCCTGCCAGCCCGCGGTGGAGATGGCGCTGGAGGACGTGAAT
 AGCCGCAGGGACATCCTGCCGGACTATGAGCTCAAGCTCATCCACCACGACAGC
 AAGTGTGATCCAGGCCAAGCCACCAAGTACCTATATGAGCTGCTCTACAACGAC
 CCTATCAAGATCATCCTTATGCCTGGCTGCAGCTCTGTCTCCACGCTGGTGGCTG
 AGGCTGCTAGGATGTGGAACCTCATTGTGCTTTCCTATGGCTCCAGCTCACCAGC
 30 CCTGTCAAACCGGCAGCGTTTCCCCACTTTCTTCCGAACGCACCCATCAGCCACA
 CTCCACAACCCTACCCGCGTGAAACTCTTTGAAAAGTGGGGCTGGAAGAAGATT
 GCTACCATCCAGCAGACCACTGAGGTCTTCACTTCGACTCTGGACGACCTGGAGG
 AACGAGTGAAGGAGGCTGGAATTGAGATTACTTTCCGCCAGAGTTTCTTCTCAGA
 TCCAGCTGTGCCCGTCAAAAACCTGAAGCGCCAGGATGCCCGAATCATCGTGGG
 35 ACTTTTCTATGAGACTGAAGCCCGGAAAGTTTTTTGTGAGGTGTACAAGGAGCGT
 CTCTTTGGGAAGAAGTACGTCTGGTTCCTCATTGGGTGGTATGCTGACAATTGGT
 TCAAGATCTACGACCCTTCTATCAACTGCACAGTGGATGAGATGACTGAGGCGGT
 GGAGGGCCACATCACAACCTGAGATTGTCTGATGCTGAATCCTGCCAATAACCCGAG
 CATTTCCAACATGACATCCCAGGAATTTGTGGAGAACTAACCAAGCGACTGAA
 40 AAGACACCCTGAGGAGACAGGAGGCTTCCAGGAGGCACCGCTGGCCTATGATGC
 CATCTGGGCCTTGGCACTGGCCCTGAACAAGACATCTGGAGGAGGCGGCGCTTCT
 GGTGTGCGCCTGGAGGACTTCAACTACAACAACCAGACCATTACCGACCAAATC
 TACCGGGCAATGAACTCTTCGTCCTTTGAGGGTGTCTCTGGCCATGTGGTGTG
 ATGCCAGCGGCTCTCGGATGGCATGGACGCTTATCGAGCAGCCTCAGGGTGGCA
 45 GCTACAAGAAGATTGGCTACTATGACAGCACCAAGGATGATCTTTCCTGGTCCAA
 AACAGATAAATGGATTGGAGGGTCCCCCCCAGCTGACCAGACCCTGGTCATCAA
 GACATTCCGCTTCTGTGTCACAGAACTCTTTATCTCCGTCTCAGTTCTCTCCAGCC
 TGGGCATTGTCTAGCTGTTGTCTGTCTGTCTTTAACATCTACAACCTCACATGTC
 CGTTATATCCAGAACTCACAGCCCAACCTGAACAACCTGACTGCTGTGGGCTGCT

CACTGGCTTTAGCTGCTGTCTTCCCCCTGGGGCTCGATGGTTACCACATTGGGAG
 GAACCAGTTTCCTTTCTGTCTGCCAGGCNCGCCTCTGGCTCCTGGGCCTGGGCTTTA
 GTCTGGGCTACGGTTCCATGTTACCAAGATTTGGTGGGTCCACACGGGCTTCAC
 AAAGAAGGAAGAAAAGAAGGAGTGGAGGAAGACTCTGGAACCCTGGAAGCTGT
 5 ATGCCACAGTGGGCCTGCTGGTGGGCATGGATGTCTCACTCTCGCCATCTGGCA
 GATCGTGGACCTCTGCACCGGACCATTGAGACATTTGCCAAGGAGGAACCTAA
 GGAAGATATTGACGTCTCTATTCTGCCCCAGCTGGAGCATTGCAGCTCCAGGAAG
 ATGAATACATGGCTTGGCATTCTTCTATGGTTACAAGGGGCTGCTGCTGCTGCTGG
 GAATCTTCCTTGCTTATGAGACCAAGAGTGTGTCCACTGAGAAGATCAATGATCA
 10 CCGGGCTGTGGGCATGGCTATCTACAATGTGGCAGTCCTGTGCCTCATCACTGCT
 CCTGTCACCATGATTCTGTCCAGCCAGCAGGATGCAGCCTTTGCCTTTGCCTCTCT
 TGCCATAGTTTTCTCCTCTATATCACTCTTGTGTGCTCTTTGTGCCAAGATGC
 GCAGGCTGATCACCCGAGGGGAATGGCAGTCGGAGGCGCAGGACACCATGAAG
 ACAGGGTCATCGACCAACAACAACGAGGAGGAGAAGTCCCGGCTGTTGGAGAA
 15 GGAGAACCGTGAACCTGGAAAAGATCATTGCTGAGAAAGAGGAGCGTGTCTCTGA
 ACTGCGCCATCAACTCCAGTCTCGGCAGCAGCTCCGCTCCCGGCGCCACCCACCG
 ACACCCCCAGAACCCTCTGGGGGCTGCCAGGGGACCCCTGAGCCCCCGAC
 CGGCTTAGCTGTGATGGGAGTCGAGTGCATTTGCTTTATAAGTGAGGGTAGGGTG
 AGGGAGGACAGGCCAGTAGGGGGAGGGAAAGGGAGAGGGGAAGGGCAGGGGA
 20 CTCAGGAAGCAGGGGGTCCCATCCCCAGCTGGGAAGAACATGCTATCCAATCT
 CATCTCTTGTAATAACATGTCCCCCTGTGAGTTCTGGGCTGATTTGGGTCTCTCAT
 TACCTCTGGGAAACAGACCTTTCTCTCTTACTGCTTCATGTAATTTGTATCACC
 TCTTCAACAATTAGTTCGTACCTGGCTTGAAGCTGCTCACTGCTCACACGCTGCCT
 TCTGAGCAGCCTCACTGCATCTTCTCTTCCCATGCAACACCCCTCTTCTAGTACC
 25 ACGGCAACCCCTGCAGCTCCTCTGCCTTTGTGCTCTGTTCCCTGTCCAGCAGGGGTC
 TCCCAACAAGTGCTCTTTCCACCCCAAGGGGCTCTCCTTTTCTCCACTGTCATA
 ATCTCTTTCCATCTTACTTGGCCTTCTATACTTTCTCACATGTGGCTCCCCCTGAAT
 TTTGCTTCCTTTGGGAGCTCATTCTTTTCGCCAAGGCTCACATGCTCCTTGCTCT
 GCTCTGTGCACTCACGCTCAGCACACATGCATCCTCCCCTCTCCTGCGTGTGCCCA
 30 CTGAACATGCTCATGTGTACACACGCTTTTCCCGTATGCTTTCTTCATGTTCACTC
 ACATGTGCTCTCGGGTGCCCTGCATTACACAGCTACGTGTGCCCTCTCATGGTCAT
 GGGTCTGCCCTTGAGCGTGTGTTGGGTAGGCATGTGCAATTTGTCTAGCATGCTGA
 GTCATGTCTTTCTATTTGCACACGTCCTATGTTTATCCATGTACTTTCCCTGTGTAC
 CCTCCATGTACCTTGTGTACTTTCTTCCCTTAAATCATGGTATTCTTCTGACAGAG
 35 CCATATGTACCCTACCCTGCACATTGTTATGCACTTTTCCCCAATTCATGTTTGGT
 GGGGCCATCCACACCCTCTCCTTGTACAGAAATCTCCATTTCTGCTCAGATTCCCC
 CCATCTCCATTGCATTGCTGACTACCCTCAGTCTACACTCACAATCATCTTCTCC
 CAAGACTGCTCCCTTTTGTGTTTGTGTTTGTGAGGGGAATTAAGGAAAAATAAG
 TGGGGGCAGGTTTGGAGAGCTGCTTCCAGTGGATAGTTGATGAGAATCCTGACC
 40 AAAGGAAGGCACCCTTGACTGTTGGGATAGACAGATGGACCTATGGGGTGGGAG
 GTGGTGTCCCTTTCACACTGTGGTGTCTCTTGGGGAAGGATCTCCCCGAATCTCA
 ATAAACCAGTGAACAGTGTGACTCGGAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

SEQ ID NO: 700

45 zh96g08.s1 Soares_fetal_liver_spleen_1NFLS_S1 Homo sapiens cDNA clone
 IMAGE:429182 3', mRNA sequence gi|1448327|gb|AA004759.1|AA004759[1448327]
 ACTTTATGCAAAAAAAAAATATACATTTATTTATAGGTCTCAATACAGCAAAATGA
 AAACGAAAATTGAGAACATTGCTCATTAGGCCAGCAACTTTAAAATTATTTAATT
 TGAAATATAAAATAGGTGGTCTTCATAAAAAGATGCATGAAATTTACCTTACCTT

ATATTTTATACTTTAAGAGTACATTTTATACAAATCAGTAACCAGGCTTCTTTCAT
GTTTAACCTGAAATGAACGTAACATAAATGAGTATCTTTCTTTTATGTAGTAGC
AAAAAGAGTCAATAATCCTTTCAAGAAAGATACTATTTCAATTCCTCCCAACTTG
GGATTCNCCATAAACACGGA

5

SEQ ID NO: 701

Homo sapiens canalicular multispecific organic anion transporter 2 (CMOAT2) mRNA,
complete cds gi|3550323|gb|AF083552.1|AF083552[3550323]

AGCCGCGCCTCGGCCCATGGACGCCCTGTGCGGTTCCGGGGAGCTCGGCTCCAA
10 GTTCTGGGACTCCAACCTGTCTGTGCACACAGAAAACCCGGACCTCACTCCCTGC
TTCCAGAACTCCCTGCTGGCCTGGGTGCCCTGCATCTACCTGTGGGTGCGCCCTGC
CCTGCTACTTGCTCTACCTGCGGCACCATTTGTCGTGGCTACATCATCCTCTCCCAC
CTGTCCAAGCTCAAGATGGTCCTGGGTGTCCTGCTGTGGTGCGTCTCCTGGGCGG
ACCTTTTTTACTCCTTCCATGGCCTGGTCCATGGCCGGGCCCCCTGCCCCTGTTTTT
15 TTTGTACCCCCCTTGGTGGTGGGGGTACCATGCTGCTGGCCACCCTGCTGATAC
AGTATGAGCGGCTGCAGGGCGTACAGTCTTCGGGGGTCTCATTATCTTCTGGTT
CCTGTGTGTGGTCTGCGCCATCGTCCCATTCGCTCCAAGATCCTTTTAGCCAAGG
CAGAGGGTGAGATCTCAGACCCCTTCGCTTCACCACCTTCTACATCCACTTTGC
CCTGGTACTCTCTGCCCTCATCTTGGCCTGCTTCAGGGAGAAACCTCCATTTTTCT
20 CCGCAAAGAATGTCGACCCTAACCCTACCTGAGACCAGCGCTGGCTTTCTCTC
CCGCTGTTTTTCTGGTGGTTCACAAAGATGGCCATCTATGGCTACCGGCATCCC
CTGGAGGAGAAGGACCTCTGGTCCCTAAAGGAAGAGGACAGATCCCAGATGGTG
GTGTCAGCAGCTGCTGGAGGCATGGAGGAAGCAGGAAAAGCAGACGGCACGACA
CAAGGCTTCAGCAGCAGCTGGGAAAATGGCTCCGGCGAGGAAGAGGTGCTGGT
25 GGGTGCCCGGCCAGGCCCGGAAGCCCTCCTTCTGAAGGCCCTGCTGGCCACC
TTCGGCTCCAGCTTCCTCATCAGTGCCTGCTTCAAGCTTATCCAGGACCTGCTCTC
CTTCATCAATCCACAGCTGCTCAGCATCCTGATCAGGTTTATCTCCAACCCCATG
GGCCCTCCTGGTGGGGCTTCCTGGTGGCTGGGCTGATGTTCTGTGCTCCATGA
TGCAGTCGCTGATCTTACAACACTATTACCACTACATCTTTGTGACTGGGGTGAA
30 GTTTCGTACTGGGATCATGGGTGTCATCTACAGGAAGGCTCTGGTTATCACCAAC
TCAGTCAAACGTGCGTCCACTGTGGGGGAAATTGTCAACCTCATGTGAGTGGATG
CCCAGCGCTTCATGGACCTTGCCCCCTTCCTCAATCTGCTGTGGTTCAGCACCCCTG
CAGATCATCCTGGCGATCTACTTCTTGGCAGAACCTAGGTCCCTCTGTCTCTGG
CTGGAGTCGCTTTCATGGTCTTGTGATTCCACTCAACGGAGCTGTGGCCGTGAA
35 GATGCGCGCCTTCCAGGTAAAGCAAATGAAATTGAAGGACTCGCGCATCAAGCT
GATGAGTGAGATCCTGAACGGCATCAAGGTGCTGAAGCTGTACGCCTGGGAGCC
CAGCTTCCTGAAGCAGGTGGAGGGCATCAGGCAGGGTGAGCTCCAGCTGCTGCG
CACGGCGGCCTACCTCCACACCACAACCACCTTCACCTGGATGTGCAGCCCCCTT
TTGGTGACCCTGATCACCTCTGGGTGTACGTGTACGTGGACCCAAACAATGTGC
40 TGGACGCCGAGAAGGCCTTTGTGTCTGTGTCTTGTGTTAATATCTTAAGACTTCCC
CTCAACATGCTGCCCCAGTTAATCAGCAACCTGACTCAGGCCAGTGTGTCTCTGA
AACGGATCCAGCAATTCTGAGCCAAGAGGAACTTGACCCCAAGAGTGTGGAAA
GAAAGACCATCTCCCCAGGCTATGCCATCACCATACACAGTGGCACCTTCACCTG
GGCCAGGACCTGCCCCCACTCTGCACAGCCTAGACATCCAGGTCCCGAAAGG
45 GGCCTGCTGGGAGAGATGGAGAAGCTAGAAGGCAAAGTGCACATGAAGGGCTCC
GTGGCCTATGTGCCCCAGCAGGCATGGATCCAGAACTGCACTCTTCAGGAAAAC
GTGCTTTTCGGCAAAGCCCTGAACCCCAAGCGCTACCAGCAGACTCTGGAGGCCT
GTGCCTTGCTAGCTGACCTGGAGATGCTGCCTGGTGGGGATCAGACAGAGATTG

GAGAGAAGGGCATTAAACCTGTCTGGGGGCCAGCGGCAGCGGGTCAGTCTGGCTC
GAGCTGTTTACAGTGATGCCGATATTTTCTTGCTGGATGACCCACTGTCCGCGGT
GGACTCTCATGTGGCCAAGCACATCTTTGACCACGTCATCGGGCCAGAAGGCGTG
CTGGCAGGCAAGACGCGAGTGCTGGTGACGCACGGCATTAGCTTCCTGCCCCAG
5 ACAGACTTCATCATTGTGCTAGCTGATGGACAGGTGTCTGAGATGGGCCCCGTACC
CAGCCCTGCTGCAGCGCAACGGCTCCTTTGCCAACTTTCTCTGCAACTATGCCCC
CGATGAGGACCAAGGGCACCTGGAGGACAGCTGGACCGCGTTGGAAGGTGCAG
AGGATAAGGAGGCACTGCTGATTGAAGACACACTCAGCAACCACACGGATCTGA
CAGACAATGATCCAGTCACCTATGTGGTCCAGAAGCAGTTTATGAGACAGCTGA
10 GTGCCCTGTCTCAGATGGGGAGGGACAGGGTCGGCCTGTACCCCGGAGGCACC
TGGGTCCATCAGAGAAGGTGCAGGTGACAGAGGCGAAGGCAGATGGGGCACTG
ACCCAGGAGGAGAAAGCAGCCATTGGCACTGTGGAGCTCAGTGTGTTCTGGGAT
TATGCCAAGGCCGTGGGGCTCTGTACCACGCTGGCCATCTGTCTCCTGTATGTGG
GTCAAAGTGCGGCTGCCATTGGAGCCAATGTGTGGCTCAGTGCCTGGACAAATG
15 ATGCCATGGCAGACAGTAGACAGAACAACACTTCCCTGAGGCTGGGCGTCTATG
CTGCTTTAGGAATTCTGCAAGGGTTCTTGGTGATGCTGGCAGCCATGGCCATGGC
AGCGGGTGGCATCCAGGCTGCCCCGTGTGTTGCACCAGGCACTGCTGCACAACAA
GATACGCTCGCCACAGTCCTTCTTTGACACCACACCATCAGGCCGCATCCTGAAC
TGCTTCTCCAAGGACATCTATGTCGTTGATGAGGTTCTGGCCCCCTGTCATCCTCAT
20 GCTGCTCAATTCTTCTTCAACGCCATCTCCACTCTTGTGGTCATCATGGCCAGCA
CGCCGCTCTTCACTGTGGTCATCCTGCCCCCTGGCTGTGCTCTACACCTTAGTGCAG
CGCTTCTATGCAGCCACATCACGGCAACTGAAGCGGCTGSAATCAGTCAGCCGCT
CAGCTATCTACTCCCACTTTTCGGAGACAGTGACTGGTGCCAGTGTCTCCGGGC
CTACAACCGCAGCCGGGATTTTGAGATCATCAGTGATACTAAGGTGGATGCCAA
25 CCAGAGAAGCTGCTACCCCTACATCATCTCCAACCGGTGGCTGAGCATCGGAGTG
GAGTTCGTGGGGAACCTGCGTGGTGCTCTTTGCTGCACTATTTGCCGTCTATCGGA
GGAGCAGCCTGAACCCGGGGCTGGTGGGCCTTTCTGTGTCCTACTCCTTGCAAGT
GACATTTGCTCTGAACTGGATGATACGAATGATGTCAGATTTGGAATCTAACATC
GTGGCTGTGGAGAGGGTCAAGGAGTACTCCAAGACAGAGACAGAGGCGCCCTGG
30 GTGGTGGAAGGCAGCCGCCCTCCCGAAGGTTGGCCCCACGTTGGGGAGGTGGAG
TTCCGGAATTATTCTGTGCGCTACCGGCCGGGCTAGACCTGGTGCTGAGAGACC
TGAGTCTGCATGTGCACGGTGGCGAGAAGGTGGGGATCGTGGGCCGCACTGGGG
CTGGCAAGTCTTCCATGACCCTTTGCCTGTTCCGCATCCTGGAGGCGGCAAAGGG
TGAAATCCGCATTGATGGCCTCAATGTGGCAGACATCGGCCTCCATGACGTGCGC
35 TCTCAGCTGACCATCATCCCGCAGGACCCCATCCTGTTCTCGGGGACCCTGCGCA
TGAACCTGGACCCCTTCGGCAGCTACTCAGAGGAGGACATTTGGTGGGCTTTGGA
GCTGTCCCACCTGCACACGTTTGTGAGCTCCAGCCGGCAGGCCTGGACTTCCAG
TGCTCAGAGGGCGGGGAGAATCTCAGCGTGGGCCAGAGGCAGCTCGTGTGCCTG
GCCCCAGCCCTGCTCCGCAAGAGCCGCATCCTGGTTTTAGACGAGGCCACAGCTG
40 CCATCGACCTGGAGACTGACAACTCATCCAGGCTACCATCCGCACCCAGTTTGA
TACCTGCACTGTCTGACCATCGCACACCGGCTTAACACTATCATGGACTACACC
AGGGTCTGGTCTGGAACAAAGGAGTAGTAGCTGAATTTGATTCTCCAGCCAACC
TCATTGCAGCTAGAGGCATCTTCTACGGGATGGCCAGAGATGCTGGACTTGCCTA
AAATATATTCTGAGATTTCTCTCTGGCCTTTCTGTTTTCATCAGGAAGGAAAT
45 GACACCAAATATGTCCGCAGAATGGACTTGATAGCAAACACTGGGGGCACCTTA
AGATTTTGCACCTGTAAAGTGCCTTACAGGGTAAGTGTGCTGAATGCTTTAGATG
AGGAAATGATCCCCAAGTGGTGAATGACACGCCTAAGGTCACAGCTAGTTTGAG
CCAGTTAGACTAGTCCCCGGTCTCCCGATTCCCAACTGAGTGTTATTTGCACACT
GCACTGTTTTCAAATAACGATTTTATGAAATGACCTCTGTCTCCTCCTCTGATTTTT

CATATTTTCTAAAGTTTCGTTTCTGTTTTTAATAAAAAAGCTTTTTCCTCCTGGAAC
AGAAGACAGCTGCTGGGTCAGGCCACCCCTAGGAACTCAGTCCTGTACTCTGGG
GTGCTGCCTGAATCCATTAAAAATGGGAGTACTGATGAAATAAACTACATGGT
CAACAGTAAAAAAAAAAAAAAAAA

5

SEQ ID NO: 702

yq42d10.s1 Soares fetal liver spleen 1 NFLS Homo sapiens cDNA clone IMAGE:198451 3',
mRNA sequence gi|970054|gb|R94659.1|R94659[970054]

TTGTTTTTTTGGTTCAGCATAACTTGGAACATTTGAAAGCTTTTCAACCTAAATG

10

TGGG

GAAAAAACAGGTAAGGCATTATTTTTGCACAAAAGTAGCATTCCTAATAGTGCA
AATGAA

TCTGATACCTCTTAAAATGGTGAGAGGTCATACACTTACTAGATTAATTTAGATT
TTCTT

15

TCTATGGCTTGACAAATTATCCCTCTATAAATTCTACTCTCACCAGAGGCTGTTG
CTGT

AATCAAAAGGATAACTGTAGGATAAAGGTCCAACCTTCTCCTGGTATCCGGCAA
AAGGGT

TTTTGCTCATATGGCAAAAAAATCTAATTTTAAATTATCCTACAGNGGAATAT

20

ACAAC

TGGGNTTCCTNNGGACCCTCTATTTATCNGGCGGCAACAGGTGGTTTCGGGGCGGC

GGNETTCCAATGGGGGGCCCTAACCCAAAATTGGGCGGNCAATCT

SEQ ID NO: 703

25

zd29f03.s1 Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone IMAGE:342077 3',
mRNA sequence gi|1367074|gb|W60315.1|W60315[1367074]

CATAACTTAAGTAAACTTTATTTTCAAAATGCTTCAGGTACAAAAGAAAACAATC

GGCAAAGTCTAACAATAATTAACAAACCAGCTCTTGAGCGGCAGAGTGCTCCAG

GGATGAGAGGGGCTGGGGATGGAAAGGTGGTTGGGAGACACAACATTTTCTAG

30

CTTCAGAAAGTCAGGGAGCCCAGATCACAGCCTGAACTTCATGGTATTGGTTACA

GATTCTTTACAAAGGTGTTTACCTCTCTCATGAGGTCTTCTTGATTGGTTACTTCC

TCAGAAAAATCATCATTGACATCCAACACCAGCACTGGAATGTTTCATCAGAGCCT

CAAAGTGAGCCTGTCACTTGTACACANGACCTCTCAAAGATCTGTACTGGCTTC

CTGGCCTGGTAAGAGTTCTCAGGGGAAG

35

SEQ ID NO: 704

yb54f05.r1 Stratagene ovary (#937217) Homo sapiens cDNA clone IMAGE:75009 5',
mRNA sequence gi|653755|gb|T51895.1|T51895[653755]

TTTCTACCGTCCTTGTCTAACTTTGTGTTGGAGGGAACCTGTTTCACTATGGCCT

40

CCTTTGCCCAAGTTGAAACAGGGGCCCATCATCATGTCTGTTTCCAGAACAGTGC

CTTGGTCATCCACATCCCCGGACCCCGCCTGGGGACCCCAAGCTGTGTCTTAT

GAAGGGGTGTGGGGGTGAGGTAGTGAAAAGGGCGGTAGTTGGTGGTGGGACCC

AGAAACGGACGCCGGTCTTGGGAGGGGTTCTTAAATTAATATTTTAAAAAAG

TAACTTTTTTTGTATTAAATTAATAAAGAAAATNNGGGACG

45

SEQ ID NO: 705

zx69a01.s1 Soares_total_fetus_Nb2HF8_9w Homo sapiens cDNA clone IMAGE:796680 3',
mRNA sequence gi|2185799|gb|AA460679.1|AA460679[2185799]

TACTCAGTCACCACCCAGAAATTGTCCGAGTTATGAAATAGATTCATTTTGAGAA

GTTACACATTTCAGTTTGTGTTTATGAACTAGCCTGTCTTGTTTCTGCCTCTTGTAAGA
AAAGAGCTAGGTCTTTATGCTGCTAGGACAAAATACTGTACATGAATTGGAGAA
TAAGGAGGGGTATCCTTCTCCCCGGTACCGGAACAAGAGAACAGTTAGTACAG
AAATGGCTTTGGCACTTTAACCCCTTAGACATTGTCCCAAACCTTGTTACTTGAGTA
5 TTGTAGCCTCACCATGATTTTATTTTAAACACCGTATCATCTCCATACTTTTATTTA
CAAATTATATATACACACAATAATACAATTCCTTCATTCTAAAACAATAGTAGAC
CCCAAACAGGTCTACATTAAGTTTC

SEQ ID NO: 706

10 zv64g11.s1 Soares_total_fetus_Nb2HF8_9w Homo sapiens cDNA clone IMAGE:758468 3',
mRNA sequence gi|2046825|gb|AA393856.1|AA393856[2046825]
TTTAACATCAGTTAAAGATTTTATTTGATTCATTAAAGAGGAACTGGTGAGGCA
TTTCCACCAGCTCAAGGAAGAATTTTGTAATGTTATATTTATGGATCAGAAATA
ACTGAAATGAATGTGCAAATGGAGGCAAACTGGCCTCTTCCACAGTGGGGAAG
15 AAAGTCAACAGAACCTCCACTAGGCATAATTTACATATGTACAGACTCAATCAGC
TTTTAATATAGAAAGATATTTGAACCCAAAATCTTTCATTAAAGGTAAAAAATACA
ATAATAATTTTAAATGAAATCCTGGAAAATTCATACAAATAAAATTTAAAGCCTC
CAATGGGGTATAATCCAGCAATATCCTAGGCAAATGCCTCCTGAAGAACAACAG
CCTTTTAAACATCACTGTTTATCATTCAAATTCAGACGTCTCCTATCTTTGGC
20 TATTTTATCTCTTCAACT

SEQ ID NO: 707

faa47b01.r1 NCI_CGAP_GCB1 Homo sapiens cDNA clone IMAGE:824041 5' similar to
AF040781.1 (Homo sapiens) mRNA sequence
25 gi|2219894|gb|AA490721.1|AA490721[2219894]
TATCTCAGAAAAGAAGACATGCGATATGCCCTGCGTAAACTGGATGACACCAAA
TTCCGCTCTCATGAGGGTGAACTTCCTACATCCGAGTTTATCCTGAGAGAAGCA
CCAGCTATGGCTACTCACGGTCTCGGTCTGGGTCAAGGGGCCGTGACTCTCCATA
CCAAAGCAGGGGTCCCACTACTTCTCTCCTTTCAGGCCCTACTGAGACAGGT
30 GATGGGAATTTTTTCTTTATTTTTTAGGTTAACTGAGCTGCTTTGTGCTCAGAATC
TACATTCCAGATTGAGGATTTAGTGTCTTAGGAAATTTTTTAAATTTTTTTTTTTA
AA

SEQ ID NO: 708

35 Human 78 kdalton glucose-regulated protein (GRP78) gene, complete cds
gi|183644|gb|M19645.1|HUMGRP78[183644]
CCCGGGGTCACCTCTGCTGGACCTACTCCGACCCCCTAGGCCGGGAGTGAAGGC
GGGACTTGTGCGGTTACCAGCGGAAATGCCTCGGGGTCAGAAAGTCGCAGGAGAG
ATAGACAGCTGCTGAACCAATGGGACCAGCGGATGGGGCGGATGTTATCTACCA
40 TTGGTGAACGTTAGAAACGAATAGCAGCCAATGAATCAGCTGGGGGGGCGGAGC
AGTGACGTTTATTGCGGAGGGGGCCGCTTCGAATCGGCGGGCGGCCAGCTTGGTG
GCCTGGGCCAATGAACGGCCTCCAACGAGCAGGGCCTTCACCAATCGGCGGCCT
CCACGACGGGGCTGGGGGAGGGTATATAAGCCGAGTAGGCGACGGTGAGGTCTG
ACGCCGGCCAAGACAGCACAGACAGATTGACCTATTGGGGTGTTTCGCGAGTGT
45 GAGAGGGAAGCGCCGCGCCTGTATTTCTAGACCTGCCCTTCGCCTGGTTCGTGG
CGCCTTGTGACCCCGGGCCCCTGCCGCTGCAAGTCGAAATTGCGCTGTGCTCCT
GTGCTACGGCCTGTGGCTGGACTGCCTGCTGCTGCCCAACTGGCTGGCAAGATGA
AGCTCTCCCTGGTGGCCGCGATGCTGCTGCTGCTCAGCGCGGCGGGGCCGAGG
AGGAGGACAAGAAGGAGGACGTGGGCACGGTGGTCGGCATCGACTTGGGGACC

ACCTACTCCTGGTAAGTGGGGTTGCGGATGAGGGGGACGGGGCGTGGCGCTGGC
TGGCGTGAGAAGTGCGGTGCTGATGTCCCTCTGTCGGGTTTTTGCAGCGTCGGCG
TGTTCAAGAACGGCCGCGTGGAGATCATCGCCAACGATCAGGGCAACCGCATCA
CGCCGTCCTATGTCGCCCTTCACTCCTGAAGGGGAACGTCTGATTGGCGATGCCGC
5 CAAGAACCAGCTCACCTCCAACCCCGAGAACACGGTCTTTGACGCCAAGCGGCT
CATCGGCCGCACGTGGAATGACCCGTCTGTGCAGCAGGACATCAAGTTCTTGCCG
TTCAAGGTTGACCCGGTTTTCTCATCCAGTTAGAGAACGGGTGGGTGGTGGGAG
TATTTAGAGTTATAAGTCTCTGGAAGTGTGAGACAACAGTTGAAGGTTATAG
ACATGATGTATGTAATAACTTTAATACTATTAGTATGTTACAAAACCTTAAGACAG
10 TTGCTGTCGTA CTGTCTACGATAGTTTAGGAATAAAAGACCGATTAAACTGAAC
TTTGTAAGACACCTATACTCCCTGAAGTATTTCTAGTCAATTTGCAGCCCCAAGG
GACCAAAATAAACCAAAATTGTGGGGATGGTAGTGGGTCTTTTAACTTTGAGATG
TCATTGTATCTGTGTCTGAAAACAATAATTCTTTAAATAGGTGGTTGAAAAGAA
AACTAAACCATA CATTCAAGTTGATATTGGAGGTGGGCAAACAAAGACATTTGC
15 TCCTGAAGAAATTTCTGCCATGGTTCTCACTAAAATGAAAGAAACCGCTGAGGCT
TATTTGGGAAAGAAGGTAAATATTTCTAGAACAAATGTTAAGTATTTTTTGATCAT
TAGTATTCTCGGTTGGCTGTTATGTATAGAAGCCTTCGTGAAGGGTTTCAAAAT
TTTAATCAGAAATGGTATTCATGCTTGTACGGTTTAATTATTGAGTCCCTTTACTA
TAAGCCAAACAAAATAGACTTTTCATGTATTATTTAATGCTTACAATTCCAGGA
20 ACAATAAAATTTTATATGTTGTATTCATCAATAATTGGCTTAAAACTAAAGTGA
TGGTTTGACTGTAATTTTTTTTTTTTGGAGATGGAGTCTTGCTCTGTTGCCAGGCT
GGACTGCAGTGGCAGCATCTCAGCTCACTGCAACCTCTGCCTCCCGGGTTAAGCA
GCTCTCCTGCCTCAGCCTCCAAGTAATGGAAAGACAGGCACACCACACAGGTG
GCTAATTTTTTTTTTTTTTTTTTAAATTTTCAGTAGAGAGAGGGTTTCTCCACATTGCC
25 AGGCTGGTCTTGAAATCCTGCCCTCAGGTTGATCCTCCTGCCTAGCCTCCCAAAG
TGCTGGATTATAGGCAGAAGCCACCGCCTGGCCAGACTGTAATTTAAATAAGGG
TTAAACTATGTGACAATACACTTAATTATCTTTATCCTTTTAGGTTACCCATGCAG
TTGTTACTGTACCAGCCTATTTAATGATGCCCAACGCCAAGCAACCAAAGACGC
TGGA ACTATTGCTGGCCTAAATGTTATGAGGATCATCAACGAGCCGTAAGTATGA
30 AATTCAGGGATACGGCATATTTGCCAAATAGTGGAATGTGAAGTACTGACAAA
ACTTTTCCCTTTTTCATCTAATAGTACGGCAGCTGCTATTGCTTATGGCCTGGAT
AAGAGGGAGGGGGAGAAGAATCCTGGTGTTTGACCTGGGTGGCGGAACCTTC
GATGTGTCTCTTCTCACCATTGACAATGGTGTCTTCGAAGTTGTGGCCACTAATG
GAGATACTCATCTGGGTGGAGAAGACTTTGACCAGCGTGTCTATGGAACACTTCAT
35 CAAACTGTACAAAAGAAGACGGGCAAAGATGTCAGGAAGGACAATAGAGCTG
TGCAGAACTCCGGCGCGAGGTAGAAAAGGCCAAGGCCCTGTCTTCTCAGCATC
AAGCAAGAATTGAAATTGAGTCCTTCTATGAAGGAGAAGACTTTTCTGAGACCCT
GACTCGGGCCAAATTTGAAGAGCTCAACATGGTATGTTTCCTTGTTTTCTGCTTTC
TAATGAGATCTCCTTAGACTCTGAATTCAGGACATTGCATCTAGATACTTAGATA
40 ACAGACATCACAGTAACCATGTCTTTTTTCTAGGATCTGTTCCGGTCTACTATGAA
GCCCCGTCCAGAAAGTGTTGGAAGATTCTGATTTGAAGAAGTCTGATATTGATGAA
ATTGTTCTTGTTGGTGGCTCGACTCGAATTCCAAAGATTCAGCAACTGGTTAAAG
AGTTCTTCAATGGCAAGGAACCATCCCGTGGCATAAACCCAGATGAAGCTGTAG
CGTATGGTGCTGCTGTCCAGGCTGGTGTGCTCTCTGGTGATCAAGATACAGGTAG
45 GTCATCATCGCAGCATCTTTCTTAGTGATTGAGTAGCTTGATGGAAGAGCTCGGT
ACCCCTATTGCTTTAGAAAATACCAGAATATGAGCAACAAGGTCACACAGCTAG
TAAAGGGTATAAGTGAAGACAAGACTGGGGTAGTCTCCAAGATCATTAGCAACT
GTTTAATTCAGTGCCTTTAAATGTGTGTGTTAGAACCCTAACCAATGTTAGAGA
GATAAACTTTACATAGCTCATAGGGAGAACTTGAATTAAGTTAAATAACTTAT

CCTTACAGGTGACCTGGTACTGCTTCATGTATGTCCCCTTACACTTGGTATTGAAA
CTGTAGGAGGTGTCATGACCAAAGTATTCCAAGTAATACAGTGGTGCCTACCAA
GAACTCTCAGATCTTTTCTACAGCTTCTGATAATCAACCAACTGTTACAATCAAG
GTCTATGAAGGTAATTACCTTAAGTTTGGTTAATATCATGGCTTTTTTTTTTGAGAT
5 GAAGTCTTGCTCTGTTGCCAGGCTGGACTGCAGTGGCAGCATCTCGGCTCACTG
CAAATTCTGTCTCCCGGGTTCAAGTGATTCTCCTGCCTCAGCCTCCAGAGTAGCT
GGATTACAGCCTGACCACCACACCTGGCTAATTTCTGTATTTTAGTAGAGGATG
GGCTTTCACCATGTTTCCAGGCTGGTCTCCAACCTCCTGACCTCAGGTCATCTGCC
TGCTCCACCGTCCCGAAAGTACTGGGATTATAGCGTGAGCCACCACGCCAGATC
10 TATCTATCATGGCATATTTTAAAAGAACATGACTTAATATGTCCTATTGAAATGG
CTAGGGAACATAAGTAAGTACTGCTGTTTTCAGATGGAGGTCTTAATTTGAATAATGTT
GATATTAGATATTTAGCATTCTTTTTTTTTTTTTTTTAAATGGAGTCTTGCTCTGTCG
CCTAGGCTGGGGTGAGTGGCATGACTTGCAACCTCTGCCTCCCGAATAGCTGGG
ATTACAGGTGCCACCATCACGCCCGGCTAAGTTTGTATTTTAGTAGAGGCGA
15 GTTTCGCCATGTTGGCCAGGCTGGTCTTGAACCCCTAACCTCAGTGATCCACGG
TCACCGACCTGGCCTCCCAAAAGTACTGTACCCAGCCAATGATTAGCATTCTCAC
TAATAATAGCATCTGAGCTGGCTCCTAGAGTACAAGAAAAAGGAGTTCACAGTA
CTTTAAAATAGATAAAATTCAGTTGAGTTAGTAACCTAACTCATTGTTAGTACTA
GTTGCTGCTCCTTGTAGACCAATATGAAATTACTTTTAGCTCGATAAAACCAAAA
20 GTGTCACTTTATGCTTCAGACTGAAATGCGGGGATCTAGATGTGCTAATGCTTGT
CAGTAACAATAACAAGTTTTCTGTATGTAACCTCTAGGTGAAAGACCCCTGAC
TAAAAGACAATCATCTTCTGGGTACATTTGATCTGACTGGAATTCCTCGTCTCCTC
GTGGGGTCCACAGATGAAAGTCACTTTGAGATAGATGTGAATGGTATCTTCG
AGTGACAGCTGAAGACAAGGGTACAGGGGACAAAAATAAGATGACAATCACCA
25 ATGACCAGAATCGCTGACACCTGAAGAAATCGAAAGGATGGTTAATGATGCTG
AGAAGTTTGCTGAGGAAGACAAAAAGCTGAAGGAGCGCATTGATACTAGAAATG
AGTTGGAAGCTATGCCTATTCTCTAAAGAATCAGATTGGAGATAAAGAAAAGC
TGGGAGGTAACTTTCTCTGAAGATAAGGAGACCATGGAAAAAGCTGTAGAAG
AAAAGATTGAATGGCTGGAAAGCCACCAAGATGCTGACATTGAAGACTTCAAAG
30 CTAAGAAGAAGGAACTGGAAGAAATTGTTCAACCAATTATCAGCAAACCTCTATG
GAAGTGCAGGCCCTCCCCAACTGGTGAAGAGGATACAGCAGAAAAAGATGAGT
TGTAAGACACTGATCTGCTAGTGCTGTAATATTGTAAATACTGGACTCAGGAACCT
TTGTTAGGAAAAAATTGAAAGAACTTAAGTCTCGAATGTAATTGGAATCTTCACC
TCAGAGTGGAGTTGAAACGCTATAGCCTAAGCGGCTGTTTACTGCTTTTCATTA
35 GCAGTTGCTCACATGTCTTTGGGTGGGGGGGAGAAGAAGAATTGGCCATCTTAA
AAAGCGGGTAAAAAACCTGGGTTAGGGTGTGTGTTACCTTCAAATGTTCTATT
TAACAACCTGGGTCATGTGCATCTGGTGTAGGAGGTTTTTCTACCATAAGTGACA
CCAATAAATGTTTGTTATTTACACTGGTCTAATGTTTGTGAGAAGCTT

40 SEQ ID NO: 709

Human adenosine receptor (A2) gene, complete cds

gi|177891|gb|M97370.1|HUMA2XXX[177891]

GGCACGAGGCTGGCTGAGCCATGATGCTGCTGCCAGAACCCCTGCAGAGGGCCT
GGTTTCAGGAGACTCAGAGTCCTCTGTGAAAAAGCCCTTGGAGAGGCGCCCCAG
45 CAGGGCTGCACTTGGCTCCTGTGAGGAAGGGGCTCAGGGTCTGGGCCCCCTCCGCC
TGGGCCGGGCTGGGAGCCAGGCGGGCGGCTGGGCTGCAGCAATGGACCGTGAGC
TGGCCCAGCCCGCGTCCGTGCTGAGCCTGCCTGTCGTCTGTGGCCATGCCATCAT
GGGCTCCTCGGTGTACATCACGGTGGAGCTGGCCATTGCTGTGCTGGCCATCCTG
GGCAATGTGCTGGTGTGCTGGGCCGTGTGGCTCAACAGCAACCTGCAGAACGTC

ACCAACTACTTTGTGGTGTCACTGGCGGGCGGCCGACATCGCAGTGGGTGTGCTCG
 CCATCCCCTTTGCCATCACCATCAGCACCGGGTTCTGCGCTGCCTGCCACGGCTG
 CCTCTTCATTGCCTGCTTCGTCCTGGTCCTCACGCAGAGCTCCATCTTCAGTCTCC
 TGGCCATCGCCATTGACCGCTACATTGCCATCCGCATCCCGCTCCGGTACAATGG
 5 CTTGGTGACCGGCACGAGGGCTAAGGGCATCATTGCCATCTGCTGGGTGCTGTCTG
 TTTGCCATCGGCCTGACTCCCATGCTAGGTTGGAACAAGTGGGTGAGCCAAAGG
 AGGGCAAGAACCCTCCCAGGGCTGCGGGGAGGGGCCAAGTGGCCTGTCTCTTTG
 AGGATGTGGTCCCCATGAACTACATGGTGTACTTCAACTTCTTTGCCTGTGTGCTG
 GTGCCCCCTGCTGCTCATGCTGGGTGTCTATTTGCGGATCTTCCTGGCGGGCGCGAC
 10 GACAGCTGAAGCAGATGGAGAGCCAGCCTCTGCCGGGGGAGCGGGGCACGGTCCA
 CACTGCAGAAGGAGGTCCATGCTGCCAAGTCACTGGCCATCATTGTGGGGCTCTT
 TGCCCTCTGCTGGCTGCCCCCTACACATCATCAACTGCTTCACTTTCTTCTGCCCCG
 ACTGCAGCCACGCCCCCTCTCTGGCTCATGTACCTGGCCATCGTCCTCTCCACACC
 AATTTCGGTTGTGAATCCCTTCATCTACGCCTACCGTATCCGCGAGTTCCGCCAGA
 15 CCTTCCGCAAGATCATTTCGCAGCCACGTCTGAGGCAGCAAGAACCTTTCAAGGC
 AGCTGGCACCAGTGCCCGGGTCTTGGCAGCTCATGGCAGTGACGGAGAGCAGGT
 CAGCCTCCGTCTCAACGGCCACCCGCCAGGAGTGTGGGCCAACGGCAGTGCTCC
 CCACCCTGAGCGGAGGCCCAATGGCTATGCCCTGGGGCTGGTGAGTGAGAGGGAG
 TGCCCAAGAGTCCCAGGGGAACACGGGCCTCCAGACGTGGAGCTCCTTAGCCA
 20 TGAGCTCAAGGGAGTGTGCCAGAGCCCCCTGGCCTAGATGACCCCTGGCCCA
 GGATGGAGCAGGAGTGTCTGATGATTGAGTTTGGCCCTTCTTAAGGGAAG
 GAGATCTTTATCTTTCTGGTTGGCTTGACCAAGTCAAGTTGGGAGAAGAGAGAGAG
 TGCCAGGAGACCCTGAGGGGACCGGGTCTTACTTTGGACTGAGAGAAGGGGAGC
 CCCAGGCTGGAGCAGCATGAGGGCCAGCAAGAAGGGCTTGGGTTCTGAGGAAGC
 25 AGATGTTTCATGCTGTGAGGCCTTGACCCAGGTGGGGGCCACAGCACCAGCAGC
 ATCTTTGCTGGGCAGGGCCCCAGCCCTCCACTGCAGAAGCATCTGGAAGCACCACC
 TTGTCTCCACAGAGCAGCTTGGGCACAGCAGACTGGCCTGGCCCTGAGACTGGG
 GAGTGGCTCCAACAGCCTCCTGCCACCCACACACCACTCTCCCTAGACTCTCCTA
 GGGTTCAGGAGCTGCTGGGCCCAGAGGTGACATTTGACTTTTTTCCAGGAAAAAT
 30 GTAAGTGTGAGGAAACCCCTTTTTATTTTATTACCTTTCACTCTCTGGCTGCTGGGT
 CTGCCGTCGGTCTGCTGCTAACCTGGCACCAGAGCCTCTGCCGGGGAGCCTCAG
 GCAGTCTCTCCTGCTGTACAGCTGCCATCCACTTCTCAGTCCCAGGGCCATCTC
 TTGGAGTGACAAAGCTGGGATCAAGGACAGGGAGTTGTAACAGAGCAGTGCCAG
 AGCATGGGGCCAGGTCCCAGGGGAGAGGTTGGGGCTGGCAGGCCACTGGCATGT
 35 GCTGAGTAGCGCAGAGCTACCCAGTGAGAGGCCTTGTCTAACTGCCTTTCTTCT
 AAAGGGAATGTTTTTTTCTGAGATAAAATAAAAACGAGCCACATCGTGTTTAAG
 CTTGTCCAAATGAAAAAAAAAAAAAAAAA/

SEQ ID NO: 710

40 za59g01.r1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:296880 5'
 similar to gb:M64925 55 KD ERYTHROCYTE MEMBRANE PROTEIN (HUMAN);,
 mRNA sequence gi|1273219|gb|W01240.1|W01240[1273219]
 GAGGAACATCTCTGCCAATGAGTTCTTGGAGTTTGGCAGCTACCAAGGCAACATG
 TTTGGCACCAAATTTGAAACAGTGCACCAGATCCATAAGCAGAACAAGATTGCC
 45 ATCCTTGACATTGAGCCCCAGACCCTGAAAATTGTTTCGGACAGCAGAAGCTTTTCG
 CTTTCATTGTGTTTCATTGCACCTACTGACCAGGGCACTCAGACAGAAGCCCTGCA
 GCAGCTGCAGAAGGACTCTGAGGCCATCCGCAGCCAGTACGCTCACTACTTTGAC
 CTCTCACTGGTCAATAATGGTGTGATGAAACCCTTAANGAAATTACAAGAAGCC
 TTCGACCAAGCGTGCAAGTTCTCCACAGTGGGGTGGCTGGTCTCCTGGGGTTTACT

NAAGCCTGGTAAGAATTGGGGGGAACCCACTTGGTATTGNCCCTCTTCCAGGATT
TTGGAAATTCCAACCGGCCTTGGNTTTAAGAGAAAANAAGGGNTGGTTCCCACT
AAT

5 SEQ ID NO: 711

ab36c08.r1 Stratagene HeLa cell s3 937216 Homo sapiens cDNA clone IMAGE:842894 5'
similar to TR:G1256802 G1256802 SODIUM/POTASSIUM-TRANSPORTING ATPASE
BETA-3 SUBUNIT.; mRNA sequence gi|2218877|gb|AA489275.1|AA489275[2218877]
CTGGCCGAGTGGGAAGCTCTTCATCTACAACCCGACCACCGGAGAATTCCTGGGGC
10 GCACCGCAAGAGCTGGGGTTTGTCTTGTCTTCTACCTAGTTTTTTATGGGTTCC
TGGCTGCACTCTTCTCATTACGATGTGGGTTATGCTTCAGACTCTCAACGATGA
GGTTCCAAAATACCGTGACCAGATTCCTAGCCAGGACTCATGGTTTTTCCAAAA
CCAGTGACCGCATTGGAATATACATTCAAGTAGGTCTGATCCAACCTCGTATGCAG
GGTACATTGAAGACCTTAAGAAGTTTCTAAAACCATATACTTTAGAAGAACAGA
15 AGAACCTCACAGTCTGTCCTGATGGAGCACTTTTTGAACAGAAGGGTCCAGTTTA
TGTTGCATGTCAGTTTCCTATTTCACTTCAAGCATGCAGTGGTATGAATGATC
CTGATTTTGGCTATTCTCAAGGAAAC

SEQ ID NO: 712

20 za24e08.s1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:293510 3',
mRNA sequence gi|1225735|gb|N69574.1|N69574[1225735]

AACTAATATTAAATAGTAAATTTAATGEGTATFAATATTGTCATATAATATTGNN
AATTAATCATGTAAATGTAAATATTACATTGAGGATATAGTAAATATTAAATTEAC
TATGTCATTGAGGACAGTATTTCAAACCTAGCTTTTAAAAAGAAAAACAGAGA
25 TTGGCAGTGAATAGAACAGTGATTGTTCACTACTTGGATCTACTGCCTTAATTT
ATACTAGGATGTCAATCCACCATTGATTTTGGACCATCAGTGCCAATGTCNACGT
AGCCAAAAAGGCCAAT

SEQ ID NO: 713

30 Human mRNA for gamma-interferon inducible early response gene (with homology to
platelet proteins) gi|33917|emb|X02530.1|HSINFGER[33917]

GAGACATTCTCAATTGCTTAGACATATTCTGAGCCTACAGCAGAGGAACCTCCA
GTCTCAGCACCATTGAATCAAACCTGCGATTCTGATTTGCTGCCTTATCTTTCTGACT
CTAAGTGGCATTCAGGAGTACCTCTCTCTAGAACCGTACGCTGTACCTGCATCA
35 GCATTAGTAATCAACCTGTTAATCCAAGGTCTTTAGAAAACTTGAAATTATTCC
TGCAAGCCAATTTTGTCCACGTGTTGAGATCATTGCTACAATGAAAAAGAAGGGT
GAGAAGAGATGTCTGAATCCAGAATCGAAGGCCATCAAGAATTTACTGAAAGCA
GTTAGCAAGGAAATGTCTAAAAGATCTCCTTAAAACCAGAGGGGAGCAAAATCG
ATGCAGTGCTTCCAAGGATGGACCACACAGAGGCTGCCTCTCCCATCACTCCCT
40 ACATGGAGTATATGTCAAGCCATAATTGTTCTTAGTTTGCAGTTACACTAAAAGG
TGACCAATGATGGTCACCAAATCAGCTGCTACTACTCCTGTAGGAAGGTAAATGT
TCATCATCCTAAGCTATTCAGTAATACTCTACCCTGGCACTATAATGTAAGCTCT
ACTGAGGTGCTATGTTCTTAGTGGATGTTCTGACCCTGCTTCAAATATTTCCCTCA
CCTTTCCCATCTTCCAAGGGTACTAAGGAATCTTTCTGCTTTGGGGTTTATCAGAA
45 TTCTCAGAAATCTCAAATAACTAAAAGGTATGCAATCAAATCTGCTTTTTAAAGAA
TGCTCTTTACTTCATGGACTTCCACTGCCATCCTCCCAAGGGGCCCAAATTCTTTC
AGTGGCTACCTACATACAATTCCAAACACATACAGGAAGGTAGAAATATCTGAA
AATGTATGTGTAAGTATTCTTATTTAATGAAAGACTGTACAAAGTATAAGTCTTA
GATGTATATATTTCTATATTGTTTTAGTGTACATGGAATAACATGTAATTAAGT

ACTATGTATCAATGAGTAACAGGAAAATTTTAAAAATACAGATAGATATATGCTC
TGCATGTTACATAAGATAAATGTGCTGAATGGTTTTCAAATAAAAAATGAGGTACT
CTCCTGGAAATATTAAGAAAGACTATCTAAATGTTGAAAGATCAAAAGGTTAAT
AAAGTAATTATAACT

5

SEQ ID NO: 714

ab21g06.r1 Stratagene lung (#937210) Homo sapiens cDNA clone IMAGE:841498 5' similar
to gb:X54304 MYOSIN REGULATORY LIGHT CHAIN 2, NONSARCOMERIC
(HUMAN);, mRNA sequence gi|2217534|gb|AA487370.1|AA487370[2217534]

10 ACAAGGAAGATTTGCGATGATATGCTTGCTTCTCTAGGGAAGAATCCCCTGATGC
ATACCTTGATGCCATGATGAATGAGGCCCCAGGGCCATTCAATTTACCATGTTC
CTGACCATGTTTGGTGAGAAGTTAAATGGCACAGATCCTGAAGATGTCATCAGA
AACGCCTTTGCTTGCTTTGATGAAGAAGCAACAGGCACCATTGAGGAAGATTACC
TAAGAGAGCTGCTGACAACCATGGGGGATCGGTTTACAGATGAGGAAGTGGATG
15 AGCTGTACAGAGAAGCACCTATTGACAAAAAGGGGAATTTCAATTACATCGAGT
TCACACGCATCCTGAAACATGGAGCCAAAGACAAAGATGACTGAAAGAACTTTA
G

SEQ ID NO: 715

20 H.sapiens mRNA for central cannabinoid receptor
gi|736236|emb|X81120.1|HSCANN6[736236]

ATCGGCTTATTTGTTTTCCTCCTCTTAGGATTGCCCTGTGGGTCACTTTCTCAGT
CATTTTGAGCTCAGCCTAATCAAAGACTGAGGTTATGAAGTCGATCCTAGATGGC
CTTGACAGATACCACTTCCGGACCATCACTGACCTCCTGTACGTGGGCTCAA
25 ATGACATTCAGTACGAAGACATCAAAGGTGACATGGCATCCAAATTAGGGTACT
TCCCACAGAAATTCCTTTAACTTCCTTTAGGGGAAGTCCCTTCCAAGAGAAGAT
GACTGCGGGAGACAACCCCCAGCTAGTCCCAGCAGACCAGGTGAACATTACAGA
ATTTTACAACAAGTCTCTCTCGTCTTCAAGGAGAATGAGGAGAACATCCAGTGT
GGGGAGAACTTCATGGACATAGAGTGTTTCATGGTCCTGAACCCCAGCCAGCAG
30 CTGGCCATTGCAGTCCTGTCCCTCACGCTGGGCACCTTCACGGTCCTGGAGAACC
TCCTGGTGCTGTGCGTCATCCTCCACTCCCGCAGCCTCCGCTGCAGGCCTTCCTAC
CACTTCATCGGCAGCCTGGCGGTGGCAGACCTCCTGGGGAGTGTCATTTTTGTCT
ACAGCTTCATTGACTTCCACGTGTTCCACCGCAAAGATAGCCGCAACGTGTTTCT
GTTCAAACCTGGGTGGGGTACGGCCTCCTTCACTGCCTCCGTGGGCAGCCTGTTC
35 CTCACAGCCATCGACAGGTACATATCCATTACAGGCCCTGGCCTATAAGAGGA
TTGTCACCAGGCCCAAGGCCGTGGTGGCGTTTTGCCTGATGTGGACCATAGCCAT
TGTGATCGCCGTGCTGCCTCTCCTGGGCTGGAAGTGCAGAACTGCAATCTGTT
TGCTCAGACATTTTCCCACACATTGATGAAACCTACCTGATGTTCTGGATCGGGG
TCACCAGCGTACTGCTTCTGTTTCATCGTGTATGCGTACATGTATATTCTCTGGAAG
40 GCTCACAGCCACGCCGTCCGCATGATTACGCGTGGCACCCAGAAGAGCATCATC
ATCCACACGTCTGAGGATGGGAAGGTACAGGTGACCCGGCCAGACCAAGCCCGC
ATGGACATTAGGTTAGCCAAGACCCTGGTCCTGATCCTGGTGGTGTGATCATCT
GCTGGGGCCCTCTGCTTGCAATCATGGTGTATGATGTCTTTGGGAAGATGAACAA
GCTCATTAAAGACGGTGTGTTGATTCTGCAGTATGCTCTGCCTGCTGAACTCCACC
45 GTGAACCCCATCATCTATGCTCTGAGGAGTAAGGACCTGCGACACGCTTTCCGGA
GCATGTTTCCCTCTTGTGAAGGCACTGCGCAGCCTCTGGATAACAGCATGGGGGA
CTCGGACTGCCTGCACAAACACGCAAACAATGCAGCCAGTGTTACAGGGCCGC
AGAAAGCTGCATCAAGAGCACAGTCAAGATTGCCAAGGTAACCATGTCTGTGTC
CACAGACACGTCTGCCGAGGCTCTGTGAGCCTGATGCCTCCCTGGCAGCACAGG

AAAAGAATTTTTTTTTTTAAGCTCAAAATCTAGAAGAGTCTATTGTCTCCTTGGTT
ATATTTTTTTAACTTTACCATGCTCAATGAAAAGGTGATTGTCACCATGATCACTT
ATCAGTTTGCTAATGTTTCCATAGTTTAGGTACTCAAACCTCATTCTCCAGGGGTT
TACAGTGAAGAAAGCCTGTTGTTTAAAGTGACTGAACGATCCTTCAAAGTCTCAAT
5 GAAATAGGAGGGAAACCTTTGGCTACACAATTGGAAGTCTAAGAACCCATGGAA
AAATGCCATCAAATGAATAATGCCTTTGTAACCACTTTCACTATAATGTGAA
ATGTAAGTGTCCGTAGTATCAGAGATGTCCATTTTTACAAGTTATAGTACTAGAG
ATATTTTGTAATAATGTATTATGTCCTGTGAGATGTGTATCAGTGTTTATGTGCTAT
TAATATTTGTTTAGTTTACGCCAACTGAAAGGTAGACTTTTATGAGAACAATGGA
10 CAAGCAGTGGATACGTGTCAATGTGTGCACTTTTTTCTATATTATTGCCCATGAT
ATAACTTTAGAAATAAACCTTAATATTTCTTCCCAAAAAAAAAAAAA

SEQ ID NO: 716

Human mRNA for dihydropteridine reductase (hDHPR)

15 gi|30818|emb|X04882.1|HSDHPR[30818]
CGGAGCCGGGCTGGCAGGAGCAGGATGGCGGCGGCGGCGGCTGCAGGCGAGGC
GCGCCGGGTGCTGGTGTACGGCGGCAGGGGCGCTCTGGGTTCTCGATGCGTGCA
GGCTTTTCGGGCCCCGCAACTGGTGGGTTGCCAGCGTTGATGTGGTGGAGAATGAA
GAGGCCAGCGCTACGATCATTGTTAAAATGACAGACTCGTTCACTGAGCAGGCT
20 GACCAGGTGACTGCTGAGGTTGGAAAGCTCTTGGGTGAAGAGAAGGTGGATGCA
ATTCTTTGCGTTGCTGGAGGATGGGCCGGGGGCAATGCCAAATCCAAGTCTCTCT
TTAAGAAGTGTGACCTGATGTGGAAGCAGAGCATATGGACATCGACCATCTCCA
GCCATCTGGCTACCAAGCATCTCAAGGAAGGAGGGCTCCTGACCTTGGCTGGCGC
AAAGGCTGCCCTGGATGGGAGTCTTGGTATGATCGGGTACGGCATGGCCAAGGG
25 TGCTGTTCAACCAGCTCTGCCAGAGCCTGGCTGGGAAGAACAGCGGCATGCCGCC
CGGGGCAGCCGCCATCGCTGTGCTCCCGGTTACCCTGGATACCCCGATGAACAGG
AAATCAATGCCTGAGGCTGACTTCAGCTCCTGGACACCCTTAGAATTCCTAGTTG
AACTTTCCATGACTGGATCACAGGGGAAAAACCGACCGAGCTCAGGAAGCCTAA
TCCAGGTGGTAACCAACAGAAGGAAGGACGGAACCTACCCAGCATATTTTATAGG
30 CCTCATCTCAGTGCCTATGAGGGGCTGCCAGAAAAGTCACTAACCTGTCTCAGT
GTGGCCTTGTCCAGCCTTGTGTTTTCTGTAAACCCCTGTTTGTGGTACGAGATAATG
AGTCCTATTTTTCTCTCACATAATATGCATTTGCTCTCCTAGGACAGTGTAAATACA
TTTATGTGAAGTAAAGACATGCGAGACTGGTGGCCTGCAAATAGCATCCGTCAAT
CTGTGTAACTGCATAGGGAGGGCTCTGCATAGCACCTGCTATAGCGGTGTCATG
35 TTGGATCGCTTTTGTGACTGTTTATCTGTCTTGACAGTGGCTGTCATCTTGACTA
CTTTGTTGATTTGTTGGTATTGGGGACATTTTAAAGGCTGAGTTATTTTTGAATGT
CATGTTTATGTCATAGACGTAGTTTTTCGCATCCTTGAATTAACTGCCTTAACCTC
TTTTGTGGTAT

40 SEQ ID NO: 717

aa24g12.r1 NCI_CGAP_GCB1 Homo sapiens cDNA clone IMAGE:814246 5' similar to
gb:D00762 PROTEASOME COMPONENT C8 (HUMAN);, mRNA sequence

gi|2191760|gb|AA465593.1|AA465593[2191760]

CGATGACTCAATCGGCACTGGGTATGACCTGTCAGCCTCTACATTCTCTCCTGAC
45 GGAAGAGTTTTTCAAGTTGAATATGCTATGAAGGCTGTGGAAAATAGTAGTACA
GCTATTGGAATCAGATGCAAAGATGGTGTGCTTTGGGGTAGAAAAATTAGTCC
TTTCTAACTTTATGAAGAAGGTTCCAACAAAAGACTTTTTAATGTTGATCGGCA
TGTTGGAATGGCAGTAGCAGGTTTGTGGCAGATGCTCGTTCTTTAGCAGACATA
GCAAGAGAAGAAGCTTCCAACCTCAGATCTAACTTTGGCTACAACATTCCACTAA

AACATCTTGCAGACAGAGTGGCCATGTATGTGCATGCATATACACTCTACAGTGC
TGTTAGACCTTTTGGGCTGCAGTTTCA

SEQ ID NO: 718

- 5 zx10e07.s1 Soares_total_fetus_Nb2HF8_9w Homo sapiens cDNA clone IMAGE:786084 3',
mRNA sequence gi|2162337|gb|AA448667.1|AA448667[2162337]
ATAAATCTATAGTTTTATTAAAGACAAAACACTGACAATGTAGTATGAAGTTTACAT
TTAAA
CAAAGTTTACACAGGAATCTAACACATGCCTAAAAGAATTTTACAACGTAGCTCT
10 AGATGCAAGTCTAGACAATATCAAGAAGTATGATGGTTCTCATGACTCAAGACAGA
GCATTTTGGGTATGTTACTTATTAGGATTTCTTAAAAAATTGTTTTGTGTGTGTAT
GTGTGTGTTTTAAAGTGAACCACTGCCCAATATGAAAGTTTAATCTTCTCCTGAG
ACCAAGGCTTTTGAAATCACTAAACTCTTGGATCAATTCAGTGAAACTTGTGCTG
TCAGTGAAGTGAACCTGCCAACAATGGTTTCAGTGTTCAAAGCTCAAAGAAAAC
15 GGCT

SEQ ID NO: 719

Human hyaluronate receptor (CD44) gene, exon 1

gi|180127|gb|M69215.1|HUMSCG01[180127]

- 20 TGGTTTGTGGTTTTTATGAAGAGATGTGAAAAAGGAAGTGTGGAATGATGGGAT
GAGAAGTTGTATGGGGAAGATGAATAGAAGAATTAGGTGGTTGAATAAAATTAA
TAAGGTGTGTGGTTGGATGAATGAATGAGTGGGATGATAGATGGACCTAAGTGGT
TAGTGGATGGACAGGAGGATGGATGGATGTGAGAGCCCCAGAAGGACATAAGG
TAAGATGGGTGGATAGATGGATGGGCGGATGGAAGGATATTTAGGAGGATGAAT
25 GAGCATGTGTGTGGAGAGAGGTGCCCATTCACACTGGCTTGAACACATGGGTTA
GCTGAGCCAAATGCCAGCCCTATGACAGGCCATCAGTAGCTTTCCCTGAGCTGTT
CTGCCAAGAAGCTAAAATTCATTCAAGCCATGTGGACTTGTTATTGAGGGGAAA
AAGAATGAGCTCTCCCTCTTTCCACTTGGAAGATTCACCAACTCCCCACCCCTCA
CTCCCCACTGTGGGCACGGAGGCACTGCGCCACCCAGGGCAAGACCTCGCCCTCT
30 CTCCAGCTCCTCTCCAGGATATCCAACATCCCTGTGAAACCAGAGATCTTGCTC
CAGCCGGATTGAGAGAAATTTAGCGGGAAAGGAGAGGGCCAAAGGCTGAACCCA
ATGGTGCAAGGTTTTACGGTTCGGTTCATCCTCTGTCCTGACGCCGCGGGGCCAGC
GGGAGAAGAAAGCCAGTGCCTCTCTGGGCGCAGGGGCCAGTGGGGCTCGGAGG
CACAGGCACCCCGCGACACTCCAGGTTCCCCGACCCACGTCCCTGGCAGCCCCGA
35 TTATTTACAGCCTCAGCAGAGCACGGGGCGGGGGCAGAGGGGCCCGCCCGGGAG
GGCTGCTACTTCTTAAAACCTCTGCGGGCTGCTTAGTCACAGCCCCCTTGCTTGG
GTGTGTCCTTCGCTCGCTCCCTCCCTCCGTCTTAGGTCACTGTTTTCAACCTCGAA
TAAAAACTGCAGCCAACCTCCGAGGCAGCCTCATTGCCCAGCGGACCCAGCCTC
TGCCAGGTTCCGTCCGCCATCCTCGTCCCGTCCCTCCGCCGGCCCCCTGCCCCGCGC
40 CCAGGGATCCTCCAGCTCCTTTGCCCCGCGCCCTCCGTTCGCTCCGGACACCATG
GACAAGTTTTTGGTGGCACGCAGCCTGGGGACTCTGCCTCGTGCCGCTGAGCCTGG
CGCAGATCGGTGAGTGCCCGCCGCAGGCTGGGCAGCAAGATGGGTGCGGGGTGC
TCAGCGCGGAC

45 SEQ ID NO: 720

yi63g06.r1 Soares_placenta_Nb2HP Homo sapiens cDNA clone IMAGE:143962 5', mRNA
sequence gi|851402|gb|R76770.1|R76770[851402]

AATTCGGAACGAGGNCTGTACAACACAGTGTGCATACAGGGATAATGCTATCATA
TTAATATGAAACAGTGTACGGGCACAAATTACCCATTTCTACAAAATAAGTGT

GCAAGTGATGCCACATATTATCCATATTCAACTGAGCTGTCATCAAAATACATTT
 TATTTACAATATGTACTATGATCAGTTGGATATTAAGTTCTAAAATGATTTACTTC
 ACTGCTACATTATAAAGGTAAAAGCAATGTGTAGGAAAAAGTGTGAGATTGTGT
 TTTTACATACTGCTTTTGTAGTTGCCATCGCTGGTTCAGTTCGACTTATAACATAT
 5 GTCTTGCTTGTAGGATTTAACACCTCCAATAGGGGATTCTTCTAACATTACAGGA
 GGATTCTTAGGGGATCCGGGGGCTTTTTCANCAGTATAT

SEQ ID NO: 721

yi07h02.r1 Soares placenta Nb2HP Homo sapiens cDNA clone IMAGE:138579 5', mRNA
 10 sequence gi|835174|gb|R63295.1|R63295[835174]

AATTCGGAACGAGGGAGAAATCAGTCTGGTTTCCATCCCAGTCGGGGAAGAGAG
 AGGTGAGAGGGAATCAGAACGTACCTAGTTGATTCTTGGTGACAAGTGCAATG
 GGGTATGGGTAGAATTTATTTTCAGAGCCAAGAGGACTTGATGGTTATAAATAAA
 GTTGCCTTTAGCAATGGAATTTACAGATCGATCATGTTGTTCCNAAAGATGTGAA
 15 TAGGATCCACAATAACAAGTTGATTACAGACTAATGTAGATATTTAGATTAGCAAG
 TATTGAACATTTGATTTCTTAGGACTGAGCTTTTAAATGAATTTCCATTATTTCTT
 CC

SEQ ID NO: 722

20 Homo sapiens P2U nucleotide receptor mRNA, complete cds
 gi|984506|gb|U07225.1|HSU07225[984506]

CGGCACGAGGCACCCCGAGAGGAGAAGCGCAGCGEAGTGGCGAGAGGAGCCCC
 TTGTGGCAGCAGCACTAECTGCCGAGAAAAATGCTGGAGGCTGGGCGTGGCCCC
 AGGCCTGGGGACCTGTTTTTCTGTTTCCCGCAGAGTTCCCTGCAGCCCGGTCCA
 25 GGTCCAGGCGTGTGCATTCATGAGTGAGGAACCCGTGCAGGCGCTGAGCATCCT
 GACCTGGAGAGCAGGGGCTGGTCAGGGCGATGGCAGCAGACCTGGGCCCCCTGGA
 ATGACACCATCAATGGCACCTGGGATGGGGATGAGCTGGGCTACAGGTGCCGCT
 TCAACGAGGACTTCAAGTACGTGCTGCTGCCTGTGTCCTACGGCGTGGTGTGCGT
 GCTTGGGCTGTGTCTGAACGCCGTGGCGCTCTACATCTTCTTGTGCCGCCTCAAG
 30 ACCTGGAATGCGTCCACCACATATATGTTCCACCTGGCTGTGTCTGATGCACTGT
 ATGCGGCCTCCCTGCCGCTGCTGGTCTATTACTACGCCCGCGGCGACCACTGGCC
 CTTACGACGCGGTGCTCTGCAAGCTGGTGCCTTCTCTTCTACACCAACCTTTACT
 GCAGCATCCTCTTCTCACCTGCATCAGCGTGCACCGGTGTCTGGGCGTCTTACG
 ACCTCTGCGCTCCCTGCGCTGGGGCCGGGCCCGCTACGCTCGCCGGGTGGCCGGG
 35 GCCGTGTGGGTGTTGGTGTCTGGCCTGCCAGGCCCGCGTCTACTTTGTCACCA
 CCAGCGCGCGGGGGCCGCGTAACCTGCCACGACACCTCGGCACCCGAGCTCT
 TCAGCCGCTTCGTGGCCTACAGCTCAGTCATGCTGGGCGCTGCTCTTCGCGGTGCC
 CTTTGCCGTCATCCTTGTCTGTTACGTGCTCATGGCTCGGCGACTGCTAAAGCCAG
 CCTACGGGACCTCGGGCGGCCTCCCTAGGGCCAAGCGCAAGTCCGTGCGCACCA
 40 TCGCCGTGGTGTGGCTGTCTTCGCCCTCTGCTTCCTGCCATTCCACGTCAACCGC
 ACCCTCTACTACTCCTTCCGCTCGCTGGACCTCAGCTGCCACACCCTCAACGCCAT
 CCCGTGCTCTACTTCTTGGCTGGGCAGAGGCTCGTACGCTTTGCCCGAGATGCCA
 AGCCACCCACTGGCCCCAGCCCTGCCACCCCGGCTCGCCGCAGGCTGGGCCTGCG
 45 CAGATCCGACAGAACTGACATGCAGAGGATAGGAGATGTGTTGGGCAGCAGTGA
 GGACTTCAGGCGGACAGAGTCCACGCCGGCTGGTAGCGAGAACTAAGGACAT
 TCGGCTGTAGGAGCAGAACTTCAGCCTGTGCAGGTTTATATTGGGAAGCTGTA
 GAGGACCAGGACTTGTGCAGACGCCACAGTCTCCCCAGATATGGACCATCAGTG
 ACTCATGCTGGATGACCCCATGCTCCGTCATTTGACAGGGGCTCAGGATATTCAC

TCTGTGGTCCAGAGTCAACTGTTCCCATAACCCCTAGTCATCGTTTGTGTGTATAA
 GTTGGGGGAATTAAGTTTCAAGAAAGGCAAGAGCTCAAGGTCAATGACACCCCT
 GGCCTGACTCCCATGCAAGTAGCTGGCTGTAAGTCCCAAGGTACCTAGGTTGGAGT
 CCAGCCTAATCAAGTCAAATGGAGAAACAGGCCAGAGAGGAAGGTGGCTTACC
 5 AAGATCACATACCAGAGTCTGGAGCTGAGCTACCTGGGGTGGGGGCCAAGTCAC
 AGGTTGGCCAGAAAACCCCTGGTAAGTAATGAGGGCTGAGTTTGCACAGTGGTCT
 GGAATGGACTGGGTGCCACGGTGGACTTAGCTCTGAGGAGTACCCCCAGCCCAA
 GAGATGAACATCTGGGGACTAATATCATAGACCCATCTGGAGGCTCCCATGGGC
 TAGGAGCAGTGTGAGGCTGTAACCTTATACTAAAGGTTGTGTTGCCTGCTAAAAAA
 10 AA

SEQ ID NO: 723

aa50e04.s1 NCI_CGAP_GCB1 Homo sapiens cDNA clone IMAGE:824382 3', mRNA
sequence

15 gi|2219301|gb|AA489699.1|AA489699[2219301]
 TTTTTTTTTTGAATAATTGAAGAATTCAGTTAAATATTTATTGAACAAATGCAG
 AGTA
 AATGAACCTAAGGGCTGTTATAACCTTAAGTTACAACAAACAACCTTCAAATATTCA
 GAGGGCTGTCACACAGAGAATGAAAGACTTGCTCAGTATTTCTCCAAAGGGCAG
 20 AACTTGAGCCAAGGGATAAATATAAGCAACCAATGGGCTGCAGGATAGTTGTAC
 AAAGTGTATCATGTATCTTCATAGCTTCTTTGCCCATATAATGCATTCCACACTTA
 AGTTTCTCCTTCTAAAGGGGACACGACAAGTTAATATGTCTCATAAATGTCTTA
 AATAAGTTGCATTTTCATGGCAAGCCCTCCACTGCCAGCAATGGATATACTCACA
 CTATGGAAAAAATCTAAAGTTAACAACCTGGTTTAGTATGGAAATGGTCTATTT
 25 GTTCCTCAGCTATGTTCTGTATCCTACATTAGTGGCTCTCAGGAGG

SEQ ID NO: 724

HUMHBC4799 Human pancreatic islet Homo sapiens cDNA similar to alpha-1
antichymotrypsin, mRNA sequence gi|1262485|dbj|D83812.1|D83812[1262485]

30 CGCAGACAATGATGGTCCTGGTGAATTACATCTTCTTTAAAGCCAAATGGGAGAT
 GCCCTTTGACCCCAANATACTCATCAGTCAAGGTTCTACTTGAGCAAGAAAAAG
 TGGGTAATGGTGCCCATGATGAGTTTGCATCACCTGACTATACCTTACTTCCGGG
 ACGAGGAGCTGTCCTGCACCGTGGTGGAGCTGAAGTACACAGGCAATGCCAGCG
 CACTCTTCATCCTCCCTGATCAAGACAAGATGGAGGAAGTGAAGCCATGCTGCT
 35 CCCANAGACCCTGAAGCGGTGGAGAGACTCTCTGGAGTTCANAGAGATAGGTGA
 GCTCTACCTGCCAAAGTTTCCANCTCGAGGGACTATAACCTGAACGACATNCTT
 CTCCAGCTGGGCATTGAGGAAGCCTTC

SEQ ID NO: 725

40 zx84c12.s1 Soares ovary tumor NbHOT Homo sapiens cDNA clone IMAGE:810454 3',
 mRNA sequence gi|2179839|gb|AA457119.1|AA457119[2179839]
 CTCATCAAAACATGATTTATTAATTTTAAGCAAGAGTAAGCATATGTGATAGTGG
 CCAGCTTGGGGATAGAACTCTTCCTGGTTGATGCACAGTTCAGCACCTGTTGGGT
 CTTGGCTGTTGGGATGATAATTCTTTTGGGTGAGGGGAACAGCCGTGGTCAAGGC
 45 TGCCTGCACCCCATCCAGGCACAGGACCCTGGGCAAAGTCTCAAAAGAGGTTAG
 TGTTTTTACTTTCGCACCAACAATACAACATAAGTATTGGGTACAAAAGAGGAGA
 TTTCTTCCCCTCTACCTCAACGGGCAAAGGCCTTCCATCTTCAGAAGAGGCTT
 GTGAGGACCATCGGTTGGATGACCTCCTAGTGAGTTCTGGCTCCCATTCAGAGCA

CAGAGAAACCCACAAAAGGGGCCTGTGGATCTGGTTCAGGTCTCAAGGGTACA
GCTTGGTTACATCCCCAGGCCCC

SEQ ID NO: 726

5 yu10b07.r1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:233365 5',
mRNA sequence gi|1057977|gb|H79888.1|H79888[1057977]
GGCACGAGAAATNGAGGCACAATATAGCACTGACTGAGTTGTAAAGCCTCCTGCC
TGGAGACTTCAGTTATAGCTGTAATAATTAATCTTATTTATAAAAAGCCACTCCAC
TAACCTTTTCTCTCCAACCTGTAAACACAGAGACAGCTTTGGGAATAAGCCAAAAA
10 CAGGGTGATCTCATTAGATTTTGAAGATATATGACTCCTTTGGGCTACATTTTCATA
TTGATCAATTTCTAGGTATTTTCACTGGCCCAAAGTATTGCATTCCCTTAACAGC
AAGCACAAGTTCTCTATATCACTTGTTTTTGTGTTGTTGTTGTTGTTGTCGTCGTTGT
TTTGAGGACGGAGTTTTGNCTCAGGTGCCCCGGNAGTGGCAGTGGTGAATCTCA
GCTCACTGGCAACCTCCACCTCCGGGGGTCAAGGCAATTCTCCGGTT

SEQ ID NO: 727

yr38g10.s1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:207618 3'
similar to gb:L24038_ma1 A-RAF PROTO-ONCOGENE SERINE/THREONINE-
PROTEIN KINASE (HUMAN);, mRNA sequence
20 gi|1012590|gb|H59758.1|H59758[1012590]
AATNATTAACAAGCAAAGGCCCAGCAGAATTCTGTGCTTCTTGGTGAAGAAAGA
GAGGAGTTCCTTGAATGGCGGGGGAGACAGAAAAGGGACCCCCCAAATCCACAT
GGGGTGCTGGGAACCCCAAATCCAGTGGAAAGGCACATCAGGCACAAATTCAG
GAGAGGTTCTGAGTGGAAATCCCTGCCACAAATCCAGCCATTGGAGATGGAGGAG
25 CTCCCAAATTTAGAAGTATCCCCAAAGCCAAGAGGAAACCAAATGATGGGAGG
AGACAGGGGGCTCAGTCTTTGGGCGGGGGTCCCCCAATTTCCAGAAGAAGTGGG
AAAAGGCACATGGGGGNCCCCCTTCATCTTCCCGGGGTGGGGGAATGGGGGGAT
TCCTNAGGGCAGCNTCAGGGGCAGAGACGAACCTTGTGTTGGGTTGGTNGGGCAA
GGTTCCTTGGGCTTNGGAG

SEQ ID NO: 728

Human thyroid hormone receptor alpha 1 (TR-alpha-1) gene, complete cds
gi|339662|gb|M24748.1|HUMTHRA1A[339662]
TGCCGGGGGGGGCCAGTGTGCCACCCAGTCTCTTGGCGTGCTGGAGGGGCATCCT
35 GGATGGAATTGAAGTGAATGGAACAGAAGCCAAGCAAGGTGGAGTGTGGGTCA
GACCCAGAGGAGAACAGTGCCAGGTCACCAGATGGAAAGCGAAAAAGAAAGAA
CGGCCAATGTTCCCTGAAAACCAGCATGTCAGGGTATATCCCTAGTTACCTGGAC
AAAGACGAGCAGTGTGTCGTGTGTTGGGGACAAGGCAACTGGTTATCACTACCGC
TGTATCACTTGTGAGGGCTGCAAGGGCTTCTTTGCCGCAATCCAGAAGAACC
40 TCCATCCCACCTATTCCTGCAAATATGACAGCTGCTGTGTCATTGACAAGATCAC
CCGCAATCAGTGCCAGCTGTGCCGCTTCAAGAAAGTGCATCGCCGTGGGCATGGCC
ATGGACTTGGTTCTAGATGACTCGAAGCGGGTGGCCAAGCGTAAGCTGATTGAG
CAGAACCAGGGAGCGGCGGCGGAAGGAGGAGATGATCCGATCACTGCAGCAGCG
ACCAGAGCCCCTCCTGAAGAGTGGGATCTGATCCACATTGCCACAGAGGCCCA
45 TCGCAGCACCAATGCCAGGGCAGCCATTGGAAACAGAGGCGGAAATTCCTGCC
CGATGACATTGGCCAGTCACCCATTGTCTCCATGCCGGACGGAGACAAGGTGGA
CCTGGAAGCCTTCAGCGAGTTTACCAAGATCATCACCCCGGCCATCACCCGTGTG
GTGGACTTTGCCAAAAAACTGCCCATGTTCTCCGAGCTGCCTTGCGAAGACCAGA
TCATCCTCCTGAAGGGGTGCTGCATGGAGATCATGTCCCTGCGGGCGGCTGTCCG

20

gb:U04682.1|Gessler Wilms tumor Homo sapiens cDNA clone IMAGE:398281|3' similar to
gb:X53416|ENDOTHELIAL ACTIN-BINDING PROTEIN (HUMAN);, mRNA sequence:
gi|2432277|gb|AA598978.1|AA598978[2432277]

35

yr86d03.s1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:212165 3' similar to gb:Z22548 THIOL-SPECIFIC ANTIOXIDANT PROTEIN (HUMAN);, mRNA sequence gi|1030355|gb|H68845.1|H68845[1030355]

45

SEQ ID NO: 731

ab23b05.r1 Stratagene lung (#937210) Homo sapiens cDNA clone IMAGE:841617 5' similar to TR:E183625 E183625 ORNITHINE DECARBOXYLASE ANTIZYME ;, mRNA sequence

5 gi|2217845|gb|AA487681.1|AA487681[2217845]
GTGCTGAGTGGCGGCACTCTACATCGAGATCCCGGGCGGCGGCTGCCCCGAGGGG
AGCAAGGACAGCTTTGCAGTTCTCCTGGAGTTCGCTGAGGAGCAGCTGCGAGCC
GACCATGTCTTCATTTGCTTCCACAAGAACCGCGATGACAGAGCCGCTTGCTCC
GAACCTTCAGCTTTTTGGGCTTTGAGATTGTGAGACCGGGGCATCCCCTTGTCCT
10 CAAGAGACCCGACGCTTGCTTCATGGCCTACACGTTTCGAGAGAGAGTCTTCGGG
A

SEQ ID NO: 732

Human elastase III B mRNA, complete cds, clone pCL1E3

15 gi|607029|gb|M18692.1|HUMELA3A[607029]
CCTATCATCGAAAACCTCATGATGCTCCGGCTGCTCAGTTCCTCCTCCTTGTTGGC
CGTTGCCTCAGGCTATGGCCACCTTCCTCTCGCCCTTCCAGCCGCGTTGTCAATG
GTGAGGATGCGGTCCCCTACAGCTGGCCCTGGCAGGTTTCCCTGCAGTATGAGAA
AAGCGGAAGCTTCTACCACACCTGTGGCGGTAGCCTCATCGCCCCGACTGGGTT
20 GTGACTGCCGGCCACTGCATCTCGAGCTCCCGGACCTACCAGGTGGTGTGGGCG
AGTACGACCGTGCTGTGAAGGAGGGCCCCGAGCAGGTGATCCCCATCAACTCTG
GGGACCTCTTTGTGCATCCACTCTGGAACCGCTCGTGTGTGGCCTGTGGCAATGA
CATCGCCCTCATCAAGCTCTCAGGCAGCGCCAGCTGGGAGACGCGCTCCAGCTC
GCCTCACTCCCTCCGGCTGGTGACATCCTTCCCAACGAGACACCCTGCTACATCA
25 CCGGCTGGGGCCGTCTCTATACCAACGGGCCACTCCCAGACAAGCTGCAGGAGG
CCCTGCTGCCGGTGGTGGACTATGAACACTGCTCCAGGTGGAAGTGGTGGGGTTC
CTCCGTGAAGAAGACCATGGTGTGTGCTGGAGGGGACATCCGCTCCGGCTGCAA
TGGTGAATCTGGAGGACCCCTCAACTGCCCCACAGAGGATGGTGGCTGGCAGGT
CCATGGCGTGACCAGCTTTGTTTCTGCCTTTGGCTGCAACACCCGCAGGAAGCCC
30 ACGGTGTTCACTCGAGTCTCCGCCTTCATTGACTGGATTGAGGAGACCATAGCAA
GCCACTAGAACCAAGGCCAGCTGGCAGTGCTGATCGATCCCACATCCTGAATA
AAGAADAAGATCTCTCAG

SEQ ID NO: 733

35 yq07g06.s1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:196282 3', mRNA sequence gi|960149|gb|R92609.1|R92609[960149]
TGCTGTTAGTTTAATGTGGACAGAGACATCCACGGCGTGACTGTTAGTTAGGAT
GAGTCAGCTTGGGGGAGTTTGTGCTTCCTGCTTGGNGTGGCCAGCCACATGCCAA
GGTCCCCTGCCTTCTAGCCCAGAATGACGGGACTGGGCAGAACACCCCCAACTTT
40 TAGCTGCCACTTGGCTCATTACAGCAGTACCAGTATGGGGGTGGGAGGGGTGAG
GCTNTGGAGTGAAGGCGGCGTATAGGGCAGAGACTAAGAGGGTCCTGTGAGATT
CTTAGAGGAGCCATCCTGNTCCAAGGGGCCTGAGCTGAGTNTGGGTCTGTGAGC
ATCTGCTGCTCCTCTCAGAGAGGGGAGATCTCACTCTCTGCCAGTCTGTCTAGCC
CCAAAG

45

SEQ ID NO: 734

yv19b06.s1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:243155 3', mRNA sequence gi|1102102|gb|H94469.1|H94469[1102102]
GCAAAACAACATTTATTCTTTAAAAAATCTATATACATTGCCATACAAAGATAC

CACATTGAAGCAGTTCTCAGGAACCTTCCAGTGAGCCTTCTCTTATAATTGCCCCG
 AGCAAGATTTCTGTGCCAGAGAAAGTCTCAGCATTTCCACCTTGGTGTNCTCTATG
 TCATCATCTTGGAGCTGCTCGGTATCAGATTCTCCATGCACAGGTCTTCTTGACGT
 CAAGTCTCCAGACACCGCATCAACTCATAAGTCTGTTCTGCTGAGAAAATCACC
 5 TGTCTTCTGTTCCAAAAGGGGCAAGGCATCTGTGTCAGCAGAGTTCATCCCAGAAAGA
 CCGAAGGGGCAATCCGAGACGTCATCAAGGACAGAAGGA

SEQ ID NO: 735

aa91g07.s1 Stratagene fetal retina 937202 Homo sapiens cDNA clone IMAGE:838716 3'

10 similar to TR:G173234 G173234 RIBOSOMAL 5S RNA-BINDING PROTEIN ;, mRNA
 sequence

gi|2180364|gb|AA457644.1|AA457644[2180364]

TAGTATGAACTTAGTGTTTTAGTAGATCTTGTGATTTCTGAAAACGAATTTCTTC
 TAAACATCAAGCTATTTTTCTTCACTATCTATACCTGCTATGCAGAGATTGAGAA
 15 CCAAACCAAATGGATATCTGCTTTTAAGATTAGAATTTGTTCTTCATCCTTAAAGC
 AGAACTCATTGAGATGAAAAGATGCTCTTAATTTATCACAGAACTGTGTATTTAA
 TAGTATGCTTATTAATAATCACGAAGTGTACTGGAATGCTAAGATAAAAAGAACTGT
 ATAGTTTCTGTTATGTAATACGAGAATAGAAATGTTATTAATAATCTTTCTATAATT
 TCCAGTGCTTCTGTTTTGAAGAACAAGGCTTAATCCCCAAGAGGAAGTAGATAT
 20 GCCAGTGTTTTTCTACATTGATCCTGAATTTGCTGAAGATCCA

SEQ ID NO: 736

H.sapiens CD18 exon 14 gi|29753|emb|X63924.1|HSCD18X14[29753]

CTCCCCGCAGCTCCTGCGCCGAGTGCCTGAAGTTCGAAAAGGGCCCCCTTTGGGAA
 25 GAACTGCAGCGCGGCGTGTCCGGGCCTGCAGCTGTGCAACAACCCCGTGAAGGG
 CAGGACCTGCAAGGAGAGGGACTCAGAGGGCTGCTGGGTGGCCTACACGCTGGA
 GCAGCAGGACGGGATGGACCGCTACCTCATCTATGTGGATGAGAGCCGAGGTGA
 GGCCGC

30 SEQ ID NO: 737

ye81h02.s1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:124179 3',

mRNA sequence gi|751008|gb|R01272.1|R01272[751008]

TCTTTATTTAAATAAAAGTTTAAATAATGTGGGTAGTGTAATAATATTAATACA
 GAAATGTATAAAAGTTGAAAGTTTCATGTGATCTACACTGTTCAAAGAAAGCTGTG
 35 AATAGACCTTTCTATGCATTTATAAACATAAGCACACACATTTTAAAATGAGTTC
 AACTGTACACTTTTCTATTAATAACTTGTTCACCTAATGTATCATGGCCATTTT
 TCCATACACAATGAATGTACTTTATTCATTTTAACAGATACGAGGATATTCCTAT
 ATGGGCTGGAACACACCTTTAACCCTATCCCTTTAATGACAGGACATTTAGGGN
 TTTCTATTACTTTCTACCCATGGTCCATTTTACGGCTTCTGTGGGGGATCCTTAA
 40 ATATCCCCCTCAGGTTCCCGGTTTCCATTTTGTT

SEQ ID NO: 738

zx35f11.s1 Soares_total_fetus_Nb2HF8_9w Homo sapiens cDNA clone IMAGE:788493 3',

mRNA sequence gi|2166225|gb|AA452556.1|AA452556[2166225]

45 TTTTGAAAGTAAAAATTTTATTTTGATTGATTTCTCAATGTATAGTTCAGTATAA
 TGCCAGTTTTTAATGGCAAAAATTTGGTTCCACTGAAACTCCATAATGCTACAGA
 GAGCTACTACTTTTCCAGGAAGTAGGTAAACAGCTAGAAAAGAAAAAGGACAAT
 TTCTAGCAGCATGGCAACTTAACTGCAGATCTAATAGGTCTGCAACTTTTACA
 CTAATAATGGCACAACAGCTGGTGACACAAGTGAGAAATGGGGAACAAGATG

SEO ID NO: 739

15

ye40b03.r1 Soares fetal liver spleen 1NFLS Homo sapiens cDNA clone IMAGE:120173 5', mRNA sequence gi|734317|gb|T95693.1|T95693[734317]

25

Human (clone HSY3RR) neuropeptide Y receptor (NPYR) mRNA, complete cds
gi|189313|gb|L01639.1|HUMNYRECA[189313]

40

TTTTTTTATACGATAAATAACTTTTTTTTAAGTTACACATTTTTCAGATATAAAAG
ACTGACCAATATTGTACAGTTTTTATTGCTTGTGGATTTTTGTCTTGTGTTTCTTT
AGTTTTTGTG

5 SEQ ID NO: 742

>AA504554

CACCCACGGTGACCGTTTTTCATCAGCAGCTCCCTCAACACCTTCCGCTCCGAGAA
GCGATACAGCCGCAGCCTCACCATCGCTGAGTTCAAGTGTAAGTGGAGTTGCTG
GTGGGCAGCCCTGCTTCTGCATGGAAGTGGGAGCTGTATGGAGTTGACGACAA
10 GTTCTACAGCAAGCTG
GATCAAGAGGATGCGCTCCTGGGCTCCTACCCTGTAGATGACGGCTG

SEQ ID NO: 743

>M11723

15 TTGGAGTCAACACTTTCGATTCCACCTTGGGAAGCCCCCAAGGAGCATAAGTACA
AAGCTGAAGAGCACACAGTCGTTCTCACTGTCACCGGGGAGCCCTGCCACTTCCC
CTTCCAGTACCACCGGCAGCTGTACCACAAATGTACCCACAAGGGCCGGCCAGG
CCCTCAGCCCTGGTGTGCTACCACCCCCAACTTTGATCAGGACCAGCGATGGGGA
TACTGTTTGGAGCCCAAGAAAGTGAAAGACCACTGCAGCAAACACAGCCCCTGC
20 CAGAAAGGAGGGACCTGTGTGAACATGCCAAGCGGCCCCCACTGTCTCTGTCCA
CAACACCTCACTGGAAACCACTGCCAGAAAGAGAAGTGCTTTGAGCCTCAGCTT
CTCCGGTTTTTCCACAAGAATGAGATATGGTATAGAAGTGAAGCAGCTGTGG
ACCCAGATGCCAGTGCAAGGGTCTGATGCCCACTGCCAGCGGCTGGCCAGCCAGG
CCTGCCGCACCAACCGGTGCTCCATGGGGGTGCTGCTGCTAGAGGTGGAGGGCC
25 ACCGCCTGTGCCACTGCCCGGTGGGCTACACCGGACCCTTCTGCGACGTGGACAC
CAAGGCAAGCTGCTATGATGGCCGCGGGCTCAGCTACCGCGGCCTGGCCAGGAC
CACGCTCTCGGGTGCGCCCTGTCAGCCGTGGGCCTCGGAGGCCACCTACCGGAAC
GTGACTGCCGAGCAAGCGCGGAAGTGGGGAAGTGGGCGGCCACGCCTTCTGCCGG
AACCCGGACAACGACATCCGCCCGTGGTGCTTCGTGCTGAACCGCGACCGGCTG
30 AGCTGGGAGTACTGCGACCTGGCACAGTGCCAGACCCCAACCCAGGCGGCGCCT
CCGACCCCGGTGTCCCCTAGGCTTCATGTCCCACTCATGCCCGCGCAGCCGGCAC
CGCCGAAGCCTCAGCCACGACCCGGACCCCGTCTCAGTCCCAGACCCCGGGAG
CCTTGCCGGCGAAGCGGGAGCAGCCGCCTTCCCTGACCAGGAACGGCCCACTGA
GCTGCGGGCAGCGGCTCCGCAAGAGTCTGTCTTCGATGACCCGCGTCTGTTGGCGG
35 GCTGGTGGCGCTACGCGGGGCGCACCCCTACATCGCCGCGCTGTACTGGGGCCA
CAGTTTCTGCGCCGGCAGCCTCATCGCCCCCTGCTGGGTGCTGACGGCCGCTCAC
TGCCTGCAGGACCGGCCCCGCACCCGAGGATCTGACGGTGGTGTCTCGGCCAGGAA
CGCCGTAACCACAGCTGTGAGCCGTGCCAGACGTTGGCCGTGCGCTCCTACCGCT
TGCACGAGGCCTTCTCGCCCGTCAGCTACCAGCACGACCTGGCTCTGTTGCGCCT
40 TCAGGAGGATGCGGACGGCAGCTGCGCGCTCCTGTGCGCTTACGTTACAGCCGGTG
TGCCTGCCAAGCGGCGCCGCGCAGCCCTCCGAGACCACGCTCTGCCAGGTGGCC
GGCTGGGGCCACCAGTTCGAGGGGGCGGAGGAATATGCCAGCTTCCCTGCAGGAG
GCGCAGGTACCGTTCCTCTCCCTGGAGCGCTGCTCAGCCCCGGACGTGCACGGAT
CCTCCATCCTCCCCGGCATGCTCTGCGCAGGGTTCTTCGAGGGCGGCACCGATGC
45 GTGCCAGGGTGATTCCGGAGGGCCCGCTGGTGTGTGAGGACCAAGCTGCAGAGCG
CCGGCTCACCCCTGCAAGGCATCATCAGCTGGGGATCGGGCTGTGGTGACCGCAA
CAAGCCAGGCGTCTACACCGATGTGGCCTACTACCTGGCCTGGATCCGGGAGCA
CACCGTTTCTGATTGCTCAGGGACTCATCTTCCCTCCTTGGTGATTCCGCAGTG

AGAGAGTGGCTGGGGCATGGAAGGCAAGATTGTGTCCCATTTCCCCAGTGCGGC
CAGCTCCGCGCCAGGATGGCGCAGGAACTCAATAAAGTGCTTTGAAAATGCTG

SEQ ID NO: 744

5 >S60489
CTACTCCTAGATATTTGGCATGATCTTCAGTATGATCTTGTGCTGTGCTATCCGCA
GGAACCGCGAGATGGTCTAGA

SEQ ID NO: 745

10 >M59916
GAATTCGGGCGGGGGCGCCGCCCGGGGCCCTGAGGGCTGGCTAGGGTCCAGGCC
GGGGGGGACGGGACAGACGAACCAGCCCCGTGTAGGAAGCGCGACAATGCCCC
GCTACGGAGCGTCACTCCGCCAGAGCTGCCCCAGGTCCGGCCGGGAGCAGGGAC
AAGACGGGACCGCCGGAGCCCCCGGACTCCTTTGGATGGGCCTGGTGCTGGCGC
15 TGGCGCTGGCGCTGGCGCTGGCTCTGTCTGACTCTCGGGTTCTCTGGGCTCCGGC
AGAGGCTCACCTCTTTCTCCCCAAGGCCATCCTGCCAGGTTACATCGCATAGTG
CCCCGGCTCCGAGATGTCTTTGGGTGGGGGAACCTCACCTGCCCAATCTGCAAAG
GTCTATTCACCGCCATCAACCTCGGGCTGAAGAAGGAACCCAATGTGGCTCGCGT
GGGCTCCGTGGCCATCAAGCTGTGCAATCTGCTGAAGATAGCACCACCTGCCGTG
20 TGCCAATCCATTGTCCACCTCTTTGAGGATGACATGGTGGAGGTGTGGAGACGCT
CAGTGCTGAGCCCATCTGAGGCCTGTGGCCTGCTCCTGGGCTCCACCTGTGGGCA
CTGGGACATTTCTCATCTTGGAAACATCTCTTGGCTACTGTGCCGAAGCCGCCCG
CCAAACCCCCCTAGCCCCCAGCECCAGGTGCCCCCTGTGAGCCGCATCCTCTTCCTAG
CACTGAACCTGCACTGGGATCATGACTACCTGGAGGGCACGGACCCTGACTGTGC
25 AGACCCACTGTGCTGCCGCCGGGGTTCTGGCCTGCCGCCCGCATCCCGGCCAGGT
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SEQ ID NO: 746

>W74362

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SEQ ID NO: 747

>N71365

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SEQ ID NO: 748

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SEQ ID NO: 749

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SEQ ID NO: 750

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SEQ ID NO: 751

15 >M60626

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SEQ ID NO: 752

5 >X70070

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SEQ ID NO: 753

35 >X58454

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15 SEQ ID NO: 754

>D13538

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SEQ ID NO: 755

45 >N76944

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SEQ ID NO: 756

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SEQ ID NO: 757

>H19264

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SEQ ID NO: 758

>AA598527

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SEQ ID NO: 759

>AA286908

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SEQ ID NO: 760

>AA280924

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SEQ ID NO: 761

15 >AA279601

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SEQ ID NO: 762

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SEQ ID NO: 763

>T61575

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45 SEQ ID NO: 764

>R23586

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SEQ ID NO: 765

>L08044

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SEQ ID NO: 766

>H52141

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SEQ ID NO: 767

>U39613

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SEQ ID NO: 768

>H91337

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SEQ ID NO: 769

>M29870

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SEQ ID NO: 770

>AA454652

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SEQ ID NO: 771

>AA424315

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SEQ ID NO: 772

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SEQ ID NO: 773

>L15189

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SEQ ID NO: 774

>W60890

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SEQ ID NO: 775

>AA287196

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35 SEQ ID NO: 776

>T97257

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45 SEQ ID NO: 777

>W96114

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SEQ ID NO: 778

>AA486836

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SEQ ID NO: 779

20 >L24470

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SEQ ID NO: 780

20 >T61078

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SEQ ID NO: 781

>S40706

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SEQ ID NO: 782

>H25907

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SEQ ID NO: 783

>N90246

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SEQ ID NO: 784

>H84113

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SEQ ID NO: 785

>AA477082

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SEQ ID NO: 786

>Z73903

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45

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SEQ ID NO: 787

>M81882

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SEQ ID NO: 788

>AA401448

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SEQ ID NO: 789

>T84762

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SEQ ID NO: 790

>T87069

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SEQ ID NO: 791

>AA424743

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45 SEQ ID NO: 792

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SEQ ID NO: 793

>T67104

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SEQ ID NO: 794

20 >R65792

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30 SEQ ID NO: 795

>T90621

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SEQ ID NO: 796

>AA464067

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SEQ ID NO: 797

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SEQ ID NO: 798

>N53024

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SEQ ID NO: 799

25 >AA398230

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SEQ ID NO: 800

35 >H21107

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45 SEQ ID NO: 801

zd20g08.s1 Soares_fetal_heart_NbHH19W Homo sapiens cDNA clone IMAGE:341246 3'

similar to WP:ZK970.2 CE02402 CLPP-LIKE PROTEASE ;, mRNA sequence

gi|1365390|gb|W58658.1|W58658[1365390]

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10 SEQ ID NO: 802

zw32b03.r1 Soares ovary tumor NbHOT Homo sapiens cDNA clone IMAGE:770957 5',
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SEQ ID NO: 803

25 ab35g03.s1 Stratagene HeLa cell s3 937216 Homo sapiens cDNA clone IMAGE:842836 3'
similar to gb:M93056 LEUKOCYTE ELASTASE INHIBITOR (HUMAN);, mRNA
sequence

gi|2216491|gb|AA486275.1|AA486275[2216491]
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